



Pre-Conference Workshop PM

1:00 PM to 4:30 PM

Regenerative Farming, Composting, Teas, Vermicomposting, and DNA Sequencing

This workshop will explain the complementary nature of composting, lawn care and regenerative farming. We will share our experience with the application of compost and extracts on regenerative farms, including how to use vermicompost to enhance the microbial content of other composts. We will explain why microbes are important to agriculture, and how to evaluate them with microscopes and hand-held DNA sequencers. Hands-on demonstrations will include a continuous flow vermi-composter, compost extractor, microscope, and DNA sequencer. We will include case studies of small/midsize-scale compost/extract/vermicompost production in regenerative farming and lawn care.

Instructors: Dr. Laura Kavanaugh, Jesse Wisner, and Simeon Kleinsasser

Fee: \$260 for USCC members, \$292 for nonmembers

Duration: 1:00 PM to 4:30 PM

Date: February 6, 2024

CCOMTM /CCPTM PDHs: 3.5

Agenda

- **1:00 – 1:05 pm:** Brief Welcome and introductions
- **1:05 – 1:50 pm:** Broad overview of the interactions between plants and microbes and why compost is better than fertilizers for growing plants. This information will help you shift your customer sales conversations from N, P, K to the demonstrated superior qualities offered by compost. - Dr. Kavanaugh
- **1:50 – 2:35 pm:** Introduction of how to use a microscope to quickly assess the biological activity in compost, extracts and soil followed by a demonstration projecting live samples on the screen and looking at them - Simeon Kleinsasser
- **2:35 – 2:50 pm:** Question and answers
- **2:50 – 3:00 pm:** Break (10 min)
- **3:00 – 3:20 pm:** Producing high-microbial quality compost through vermicomposting, and explaining the benefits of, and differences between, compost extracts and compost teas - Jesse Wisner
- **3:20 – 3:40 pm:** Equipment solutions for making high quality vermicompost and compost extracts. Hands-on equipment demo of a vermicompost continuous flow system and extractor and discussion of how they can be used to inoculate and enhance bulk compost along with other applications - Simeon Kleinsasser
- **3:40 – 4:15 pm:** Product evaluation using recent breakthroughs in DNA sequencing technologies to gain deep insights into the biological content in your compost and how this information can guide efforts to optimize your products. Data from vermicomposting and a regenerative farm will be shared to provide real life examples of the power of this approach – Dr. Kavanaugh

- **4:15 – 4:30 pm** Questions and Answers.

About the instructors:

Dr. Laura Kavanaugh is an engineer, scientist, and entrepreneur. She has degrees in Chemistry, Chemical Engineering and Mechanical Engineering from Purdue University and holds a Ph.D. from the University Program in Genetics and Genomics from Duke University. She has had a varied and extensive career which includes over 13 years working in the Space Shuttle Mission Control Center in Houston, TX and over 10 years working for Syngenta Biotechnology in Research Triangle Park, NC, on bioinformatics, DNA sequencing, and soil microbes. She is currently founder and CEO of Genome Insights LLC which applies the latest DNA sequencing technologies to enhance regenerative farming and large composting operations. She also oversees the compost and liquid biological amendment operations for Union Grove Farm Vineyard in Chapel Hill, NC and recently assumed the role of Chief Science Officer at Advancing Eco Agriculture, a leading regenerative farming company.

Simeon Kleinsasser is a young soil scientist with a background in engineering who is passionate about helping farmers, ranchers and ground managers transition their land to regenerative practices utilizing the six principles of regenerative farming. He specializes in providing on-the-farm solutions to help the grower produce their own fertility onsite instead of subscribing to yearly applications from other sources. After graduating high school, where he won two national awards for innovative compost heat extraction systems, he went on to start engineering training in New York. Simultaneously he started the Soil Food Web program and eventually transferred out of engineering to pursue a degree in plant science. This combination of engineering and plant science background helped him work with Hiwassee Products on developing their Bio-Extractor. Simeon has used the equipment he helped develop to help growers and turf professionals transform their management practices to reduce or eliminate the need for chemical inputs by promoting a healthy soil which is therefore able to resist adverse conditions and diseases. His favorite quote, from Indiana farmer Rick Clark, provides the context that is needed to switch from the safety net of conventional agriculture to the new world of regenerative practices. "If you are not uncomfortable with what you are doing, then you are not trying hard enough to change."