

SERA-17 MEETING, BALTIMORE, MD, November 6-7 2018

Multistate Research Activity Accomplishments Report

Project/Activity Number: SERA17

Project/Activity Title: Organization to Minimize Nutrient Loss from the Landscape

Period Covered: 1 October 2017 – 30 September 2018

Date of this Report: January 11 2019

Annual Meeting date: November 6–7 2018

Summary and Minutes of the Annual Meeting

Meeting Agenda

Wednesday, November 7, 2018	
5:00-7:00pm	Informal mixer and poster session Cash bar and light hors d'oeuvres
Thursday, November 8, 2018	
8:00-8:05am	Introductions and Housekeeping Tom Bruulsema, Chair
Discussion 1: Soil Health and Phosphorus Management	
8:05-8:25am	Interactions between Management for Soil Health and Phosphorus Losses Emily Duncan, USDA-ARS
8:25-9:10am	Facilitated Discussion
Discussion 2: Colloidal Soil Phosphorus	
9:10-9:30am	Colloidal Phosphorus: Understudied and not well understood – implications for BMPs and ecological modeling Mark River, University of Pittsburgh
9:30-10:15am	Facilitated Discussion
10:15-10:30am	Break
10:30-11:00am	NRCS Nutrient Loss Risk Assessment Tools – WEPP, STEP, etc. Dana Ashford-Kornburger, USDA-NRCS
Breakouts and Business Meeting	
11:00-11:45am	Breakout groups meet
11:45am-12:30pm	Business meeting and breakout group reports
12:30-1:00pm	Discussion about 2020 meeting and beyond

Discussion Topic 1: Soil Health and Phosphorus Management

Emily Duncan (USDA-ARS) gave an overview of talks presented at ASA Environmental Quality session “Exploring soil health and phosphorus connections.” She will put the presentations on website.

Discussion centered on SERA-17 white paper, an article in Crops and Soils, Webinar to MNRC, and a peer-reviewed article.

Suggestions were put forward on how to use this information including conducting sessions at various conferences/events around the country. SERA-17 would be a partner in those events; this would ensure that the information is coming from reliable sources. Some discussion centered on partnering with NRCS, and perhaps developing an NRCS webinar. NRCS partners are interested in us doing a webinar for their staff of soil health and nutrients. We should work with Dana to schedule when we are ready.

Some discussion on the breadth of topic, whether to keep it to North America or extend other parts of the world. The definition of soil health was discussed.

Goals and objectives of white paper need to be defined. Many points discussing the benefits and conflicts of soil health and P management were brought up and discussed; it would be good to include these in the white paper.

Discussion Topic 2: Colloidal Phosphorus

Mark River (University of Pittsburg) discussed his PhD research on colloidal P in North Carolina. Interest from the audience on colloidal P: what it is, how to define it, how to measure it, how to use this information in BMPs. Interest among the group to pursue this as a project to investigate colloidal P in water bodies. Mark River agreed to lead the project and will solicit participants from the group.

Discussion Topic 3: NRCS Nutrient Loss Risk Assessment Tools

Mike Kucera (NRCS) talked about WEPP (process-based model) implementation timeline that will replace existing RUSLE 2 (empirical model). Full implementation will occur on October 1 2019. Tremendous interest from the group on how good WEPP estimates are, and if the user interface is better/easy to navigate. NRCS may plan a Webinar to discuss WEPP in more detail and answer questions.

Chris Gross (NRCS) gave an overview of NRCS tools used for nutrient management and water quality.

Chesapeake Bay soil test P project: Frank Coale (UMD) introduced a future project on need for getting soil test P in CBW, as part of the initiative. He is looking for help with this project.

Breakouts and Business Meeting

Election for new chair: Nomination of John Kovar as incoming chair was proposed, which was unanimously accepted. He would serve as chair-elect for 2019, chair in 2020, and past chair in 2021.

Location for SERA-17 meeting in 2020: Representative (Matt Scholz) from Sustainable Phosphorus Alliance (SPI) offered a proposal to host the meeting either in Phoenix, AZ or Washington DC at ASU office. Lindsay Pease proposed to host 2020 meeting in red river valley in Fargo, ND.

SERA-17 format: Discussion about shortened format of SERA-17 (ending around 1 pm) vs. full day. Shortened version allows people to get home on Thursday night and reduce cost. Folks were asked to vote and there were many hands supporting the shortened version of meeting, when held with the societies. A

similar shortened version of meeting will happen in 2019 in conjunction with ASA-SSSA-CSSA meetings in San Antonio, TX. SERA-17 meeting will begin on November 13 (Wednesday) evening and will end on November 14 (Thursday) at 1 pm.

Topics for next SERA-17 meeting:

Topic #1: Erika Larsen from EPA agreed to lead a topic area on trade-offs, beginning with soil health and then covering other broad topics of N and P management. Information gaps need to be filled.

Topic #2 (Toor, and Chris Gross to lead): “Adventures and Lessons Learned Edge of the field P Loss Monitoring”

ASA community is also seeking topics for oral/symposia sessions for 2019 ASA meeting.

Breakout groups:

Aquatic side: add a few limnologists to look at P bioavailability (task for Mark River)?

Soil test calibration/correlation and recommendations: This topic area was discussed at the 2017 SERA17 meeting and this past year the group is working together and consists of southern and northeastern soil fertility faculty and ARS personnel. We have some funds and will continue to work on this topic in 2019. Part of the effort is to develop a searchable soil test recommendation database that would be housed in the National Ag Library and host various types of searchable soil test calibration and correlation data.

BMPs group: factsheet revision. Factsheets on SERA-17 website are old. Need to revise and update. Need a volunteer to replace Forbes Walker to review what's on website and ask the group for new and timely topics.

Policy group: John Lory. Not much activity.

Consult Ag Library (Deanna) to host various types of data and develop a database.

Nathan McKinney: Research Advisor to SERA-17

Suggested to (1) Update website with achievable milestones and (2) Talk about outreach component to end users on website or make the connection? We may win \$15,000 if awarded outstanding multi-state project award.

New Extension Advisor to SERA-17 Michael Buschermohle from University of Tennessee was introduced to the group.

2019 SERA-17 Meeting will be held in conjunction with ASA-CSSA-SSSA on November 13-14 in San Antonio, TX.

Accomplishments:

The 2018 SERA17 meeting brought together 44 participants, including 10 graduate students with diverse backgrounds from Canada and the USA. Discussion centered on three topics: soil health, colloidal phosphorus, and NRCS risk assessment tools. Considerable interest was expressed on these topics and specific activities were proposed to advance the science, including a white paper addressed soil health and phosphorus management; a pilot project to look at colloidal phosphorus, and NRCS webinar on new risk assessment tool, which will be implemented in Fall 2019. Few topics were proposed for 2019 SERA17 meeting including tradeoffs/conflicts of soil health and nutrient management and edge of the field losses.

Impact:

SERA17 members have a long history of tackling complex problems and developing solutions for better managing nutrients and protecting the environment. For example, discussions held at this year's meeting (which were continued from last year's meeting) on colloidal P are resulting in reconsidering how we view soluble P; this new line of query by SERA17 members may revolutionize our understanding of P and how to develop new best management practices to reduce P losses. Likewise, our discussion on P and soil health is leading to development of a white paper. Further, the ongoing discussions in the SERA 17 memberships will contribute to content for the JEQ special issue on the 350th anniversary of the discovery of P.

Minutes taken by Gurpal Toor, with contributions from Amy Shober, Emily Duncan, Deanna Osmond, John Kovar, and Tom Bruulsema.