

NC1190 Meeting Minutes

June 11th 2020, 1-6 pm (eastern time zone) and August 7, 2020

Zoom <https://osu.zoom.us/j/97829242405?pwd=NTJEeGgwR1NhOHNBjYTR4WkM0WDFzZz09>

Present:

Name	Organization	11-Jun	7-Aug
J. Arbuckle	Iowa State University	x	x
K.J. Brasier	Penn State University	x	
M. Burbach	University of Nebraska Lincoln	x	
A.K. Chaudhary	Penn State University	x	
S. Church	Montana State	x	x
A. Colletti	Iowa State University	x	
M. Davenport	University of Minnesota	x	x
W. Eaton	Penn State University	x	x
K. Floress	USDA Forest Service	x	
S. Gasteyer	Michigan State University	x	x
K. Genskow	University of Wisconsin Madison		x
B. Gramig	Illinois	x	x
T. Haigh	University of Nebraska Lincoln	x	
D. Jackson-Smith	The Ohio State University	x	x
R. Margerum	University of Oregon	x	x
A. Mase	University of Wisconsin Madison	x	
J.M. Peterson	University of Minnesota	x	x
L.S. Prokopy	Purdue University	x	x
P. Ranjan	Purdue University	x	x
A. Rissman	University of Wisconsin Madison	x	
A. Rosenberg	USDA	x	x
M. Sanderson	Kansas State University		
B. Shaw	University of Wisconsin Madison		x
J. Schad	Utah State University	x	x
C. Stephenson	Virginia Tech		x
A. Thompson	Purdue University	x	x
E. Usher	Purdue University	x	x
H. Veisi	Shahid Beheshti University, Tehran, Iran	x	
S. Wallander	USDA, ARS	x	
C. Wardropper	University of Idaho	x	x
A. Wilke	University of Minnesota		x
L. Yoder	Indiana University	x	x

Introductions & state reports/updates (1 hour)

- Welcome & zoom ground rules

- Each state will give a 3 minute oral highlights reel of their NC1190 related work (they can assume everyone has read the more detailed version which will be emailed out).
- C. Wardropper, Idaho update: Wisconsin and Indiana cover crop adoption, climate decision support tools, drought-based tools on rangeland, water quality and toxins in the West. EPA funding to do work on Mercury. Still coding NRS reports and aim to share with group in early fall
- K. Floress, Illinois update: metadata from conservation practice review is available. Saginaw Bay watershed; food, energy and water in Chicago suburbs, water consumption, household consumption
- B. Gramig update: Multistate project on BMP adoption, ARS data from ERS to look at conservation practices, adoption and evaluation; Evaluate EQUIP and CSP; water quality measurements in the Illinois and Wabash. INFEWS on phosphorus, from bio processing, waste processing and economics. Market valuations survey on willingness to pay.
- E. Usher, Indiana update: Agricultural conservation planning framework with Iowa, Iowa State, interviewing about social and institutional opportunities and challenges to integrate ACPF into NRC. To identify conservation opportunities for farmers at the watershed level. Then surveys in watersheds that have used ACPF. Conservation innovation grant to understand enhanced efficiency of fertilizers as a conservation practice.
- P. Rangan, Indiana update: Focus groups across Indiana, Illinois and Iowa to understand barriers and motivation to non-performance with J. Arbuckle; rented farmland, non-operating landowners.
- A. Thompson, Indiana update: Wisconsin work and Saginaw Bay watershed, ag buffer builder developed by FS for whole farm design, landscape design to visualize potential futures, game called climate buffer net to teach students about conservation planning and the ag landscape.
- L. Yoder, Asst. Prof. Indiana Univ.: collaborative governance in Iowa, interviews with board members; Southern Indiana with 12 farmers taking water samples from tile drains.
- J. Arbuckle, Iowa update: Farmer survey about nutrient reduction strategy rotated around HUC 6 watersheds in Iowa, 2019 data from 6000 farmers, big data set, multi-level modeling and spatial analysis; Water for Ag project analyzing data from MN and IA. IA did a stakeholder engagement process, interviewed 60 farmers, workshop focused on mass mortality of livestock scenario, included FEMA.
- S. Gasteyer, Michigan update: Farmer led conservation projects in southern Michigan, comparing across initiatives; edge of field monitoring, organizational design, information sharing; unfunded project, drainage edge of field, increasing tile drains, what is relation to groundwater and hydrological dynamics, increased drainage and irrigation related to climate change; paper in review on algal blooms in inland lakes, great lakes, and community mobilization;
- S. Church, Montana update: National Water Quality Initiative case study of watershed; upper Yellowstone River volunteer water monitoring project to understand how data are used and perceived, whether citizen science influences conservation practices; conflict between ag and anglers; wetland science Delphi surveys list of ecosystem services of wetlands.

- M. Burbach, Nebraska update: JCWRE special issue on catalyzing change; qualitative study on impact of [alumni?] using community capitals framework; USDA funded water for Ag project
- T. Haigh, Nebraska update: National drought mitigation center work with Mark, drought learning network to prepare for future droughts.
- D. Jackson-Smith, Ohio update: Behavioral heterogeneity and SWAT models, systematic literature review and how people handled fertilizer rate contrast with survey data on actual fertilizer application, and implications be stimulating heterogeneity in SWAT. New postdoc on food, energy and water project, participatory modeling exercise, interacting models of changing globalization and sustainability policy environments, trying also to simulate pandemics, statewide random sample survey with 45% response rate; concept model on NSF project has been evolving with input from economists, decision risk scientists, social psychologists, structural sociologists, and anthropologists. Participatory agriculture and on-farm research, will be conducting interviews this fall
- W. Eaton, Pennsylvania update: Water for Ag, supporting and testing outcomes of stakeholder engagement, grant from USGS to do water quality sampling, farmers feel like they are blamed for water quality in Chesapeake Bay; I was invited to a workshop which led to a working group around collaboration, wildfire, and water impacts; USDA conference grant. USDA conference grant, series of virtual meetings, first workshop scheduled for Oct. 20 and 23 (<https://engagementworkshop2021.wordpress.com/>)
- A. Chaudhary, PSU update: leading an extension education and professionals to see how they engage with farmers for better communication; Seed project comparing progressive and non-progressive farmers and BMP adoption; Part of working group with Wes eyeing NSF grant. Surveying producers in Pennsylvania for documenting BMPs and watershed implementation planning credits.
- J. Schad, Utah update: Finishing work from S. Dakota; Seed grand to work with soil health network in Utah and farm demonstration sites; survey project funded by nutrient research education council in S. Dakota with agronomists; survey of livestock producers and attitudes toward dung beetles, project with rangeland ecologists and entomologists; testing sample sources half from farm market ID and half from FSA to see if there is a difference in bad addresses, overall response rate.; papers coming out on project looking at cover crops and conservation tillage and perceived profitability.
- M. Davenport, MN update: study aimed at protecting Manoomin, wild rice, in the Great Lakes, Surveys with harvesters, non-native harvesters. Interviews with tribal representatives and state reps on consultation between state and tribe around sulfate standards to protect wild rice. Also focusing on different ways of knowing and how people talk about science, integrating different narratives of knowing for better science and better stewardship. Just awarded a NSF CNH2 grant. Work with J. Arbuckle on groundwater supply. Urban waters program doing surveys with BIPOC communities in Twin Cities on water values and beliefs with a focus on water justice. Supporting MN EQB on meta-analysis of our MN social science data. Natural Resources Atlas project with UMD for decision making. Developing several fact sheets or research summaries on our work that are legislator, lay person friendly.

A. Rissman, WI update: INFEWS project in MN, WI, IA, IL, and MO looking at resilience to change and shocks, stressors in the system associated with flood and drought. Lots of modeling and eventually a farmer survey, SAS CAP project through USDA focus on grass-based dairy and beef production, leading policy and governance team, will be producing a website with state-based summaries

R. Margerum, Oregon update: Watershed study with OSU, longitudinal study with watershed council in Oregon. Study with Oregon watershed enhancement board, working with Pakistani Fulbright Scholar on community-based watershed groups. Working with network of watershed councils across Oregon.

USDA ARS: S. Wallander, reports on practice contracts and dropped contracts, cover crops adoption report, conducting survey of irrigation organizations and groundwater districts in 24 states (drought planning). A. Rosenberg study looks at influence of onfield resource concerns on cons. Practice adoption. Cover crop and conservation tillage practices. Prevalence of resource concerns across U.S. and seeking of TA for concerns: soil compaction, erosion. Organic matter, etc.

Jeff Peterson: may or may not be annual meeting. Interest in proposal process, intent letter first thing due, annual award given out by 4 regional experiment stations for multistate projects—Jeff will share notice, UCOWR meeting will be back in 2022. Next year's meeting is in N. Carolina.

Old business progress from 2019— led by person in bold

- Participatory approaches and engagement papers & workshop (**Wes**, Doug, Kathy, Mae)
Also interested: Stephen,

Wes: Water for Ag group is in 3rd year. Do stakeholder engagement and support, while studying what changes. Core principals put into practice. Every project site has been successful. Has conceptual model of engagement. Collaborative governance literature.

Mae: community-based research with BIPOC communities urban and rural. Kathy suggests as a possible theme, Stephen is interested. What is community engagement?

- Coordinating data/instruments/research on BMP adoption/persistence (**Linda**, Kurt, Adena)

Database to track survey questions across regions has been topic since NC1190 started, has been challenging to get done. Little progress. Persistence in conservation practices—EQIP in partnership with TNC to look at spatial trends in adoption of cover crops and maintenance. Stephen Wallander has done some work on persistence using satellite data to get long panels of practice adoption, initially no-till and now cover crops. Perhaps we should include a workgroup on persistence. Linda's spatial work is using OPTIS, which isn't accurate at the field level, better at county level. Anil did survey in 2016 with producers in 2019 at PSU. CIG grants that are 5-years could provide opportunity for longitudinal research on persistence. How long is persistence? Commodity prices and land use change might tell us a lot about adoption or disadoption.

- Hypoxia Task Force/ NRS coordinated interviews (**Chloe**, Stephen, Landon, Linda):

Chloe's group has started interviews with folks involved in NRS as a result of Stoner memo EPA. Sylvia Secchi conducted document analysis of NRS strategies. Has not been interviews conducted. RQs are what are similarities and differences in each state to develop NRS? What extent are NRS starting new efforts? What extent are state vs. GoM catalyzed NRS. Upper MISS Basin (7 states), 4 interviews per state (agency, agricultural stakeholders). Have completed many interviews. Focusing on developing paper. Working through inter-coder reliability process. May want to consider lower basin folks. Chloe can share interview protocol. MN Interviews conducted but need more. IL interviews have been conducted. Could be interesting to do comparisons with Chesapeake Bay or Great Lakes. Could apply for funds from NC??? (Stephen at 2:13).

- Drainage & GW mgt (**Stephen**, Pranay, Matt): also interested: Kristin, Chloe, Doug, Anil, Ben, Steven W., Andrew, Sarah Church

This topic is least developed. At last meeting in Wooster, we started talking about drainage as a driver of water quality. 53% of ag acres are drained in Indiana. Much of farmland would be marsh if they weren't drained. As climate change increases severity of rainfall, results in increase of drainage. Tiled lands. What are drivers of tiling? Applied to NIFA but not funded. It's a collective problem. Pranay studied in his dissertation the governance of drainage systems. Interesting urban-rural dynamics in drainage—it's not just about farming. Institutions play a strong role in drainage, and culture. Mae's interested in GW contamination and DW. Irrigation expansion is a big issue, especially because of climate change. Interesting policy issues on managing groundwater in riparian states. Fertile ground for discussion. S. Wallander will have findings from irrigation orgs in December.

- *Urban-rural paper – quick update and celebration (Sarah)*

Paper submitted to Ag and Human values on policy tools and urban rural divide.

- *Performance measurement – quick update (Chloe)*

Indicators of outcomes, edge of field monitoring. What are performance indicators for water quality?

- *Survey fatigue – quick update (Kathy)*
- *Other old business?*

Identify possible new activities/focal projects to explore in our last full year

- New techs and farmer-led science (**Stephen**)

Relating new tech to management. Related to edge of field monitoring. What is process of sampling and getting data to farmers. What drives use of new information? Relation to decision support tools (Chloe). It could relate to community participatory engagement. S. Wallander, more use of evapo-transpiration monitoring system provides data, real time or daily information. Also has connections to citizen science groups and citizen monitoring.

- Water justice (**Mae**)

Who has access to water and sanitation? Sometimes has to do with agriculture, CAFOs, rural folks are impacted, Latinx and others. Fracking and alternative energy affects water in rural communities. Gabe Lade at McCalester College did a survey of farmers. Anil, environmental justice.

- Risk perception and communication (**Mae**)

Wes is interested in PSU, R. Margerum interested in hazard tools in Oregon—risk perception came up. Worked with Adam Zwickle, Chloe knows of Amber Mase and the Social Amplification of Risk. Central Mich. work in Flint and race and risk perception. Risk attenuation. Cultural dimensions of risk perception.

- Climate change planning and communication (**Sarah**)

Flooding and drought and influence on planning. Interested in content analysis of plans to look at how climate change is or is not addressed. How are planners communicating climate change to communities?

NDMC had been collecting and archiving all drought plans. Interactions between climate hubs and states.

- Other ideas for 2020-21 coordinated work through NC1190?

Brainstorming Breakouts

- Vote on topics for breakout groups – goal is to brainstorm activities for 2020-21
- Breakout groups to discuss next steps for 2 or 3 old/new ideas in more detail
 - Develop some proposed activities/outputs for group to do

Disadoption and surveying farmers: Linda lead, outlined 2 papers

Drainage: Stephen and Pranay, outlined one paper, theoretical

Risk perception and communication: Wes—cultural theory for risk perception, Rich—natural hazard planning, communicating risk to decision makers. Importance of telling stories and meaning making. Chloe—grad student focusing on risk attenuation will do systematic review on how attenuation is measured in environmental risk perception may broaden to other types of environmental risk. Lots of different language, normalization, attenuation, etc. Types of risk and how are they measured. Cultural cognition framework for risk perception. Perhaps a model bringing our literatures together? Amber—interested in well water risk. Fear of more regulation. Risk of regulation, shadow of the state. Uncertainty and climate decision making. Better cohesion in risk perception literatures. Systematic review or exploratory review. How are they measured and operationalized. Rich—risk communication, how is different information communicated to stakeholders. Communication to individuals? Governance? Develop a common set of measures. Share survey questions. 40 years of RP literature, how do we filter? Time frame? Water? Watersheds? Surface or ground? Maybe those are filters we could apply in our systematic review. Wes doing one with Qualtrics, codebook, etc. Chloe, Sarah, Rich have done this before. Rich put in a NSF grant with P. Slovic to do experimental methods around hazards and risk perception. Chloe—PNAS paper experimental design and surveys on uncertainty and types of data—narratives or numbers. Tonya—we are experiencing an experiment right now with COVID. Ag water quality lit review would be useful, which models are being used and which are being ignored. In our field what are models used? Hadi—cognitive bias in relation to risk perception and communication. Amber—role of messenger, in target behavior or attitude. Tonya—we rarely think about conflict and power or agency. Risk perception is emotional and the emotional aspects of risk haven't been fully explored. Also: Emily Usher, Kristin Floress, Anil Kumar Chaudhary,

We had a productive meeting on July 21, 2020 and have a plan for a review paper. Wes appreciated the meeting evaluation process

Mae sent inquiry to NC 1190 on groundwater, WQ and Water Justice. Water Justice: Research justice, diversifying our group, recruiting BIPOC scientists, broadening our project name and goal? Access to water, growing coalition of people who are concerned about water quality, Other research networks: <https://nativewaters-aridlands.com/>, Chloe suggests a name change or new vision for research that includes community impacts and water, anyone can be added to the list serve, Richard suggests a bottom up approach; where we talk to folks about what would make this more inviting. What are benefits of NC1190? What do we get out of it?

More Business

- Elect new officer
- Planning next meeting schedule/locations/topics

- Brainstorm new proposal ideas

Multifunctional landscapes, landscape scale conservation, watershed scale conservation—NRCS, USDA FS, reflects diversity of ag systems, whole farm system. Water in multifunctional landscapes, water governance, participatory action and outcomes. Water governance and management, multi-scale drivers of water governance and conservation, managing water systems

New proposal discussion:

Interest in broadening focus to be more inclusive of BIPOC research, Jeff says that is fine with USDA, Doug reminds we have a timeline and would need to make decisions soon for overhaul

Are RQs too constraining? Or too vague for what we want to do? Keep catalysts? Doug suggests keeping conservation behaviors, resource management and governance. Jessica suggests adding creating changes or injustices. Wes would like to see the word community in there. Include structural barriers and contextual barriers

What are psychological, social and cultural barriers and opportunities to address water quality, quantity and equity issues?

What are social and cultural narratives of water-related risk and vulnerability and how do these narratives influence action? (Mae, Emily)

Listed RQs of interest to committee members

Stephen will lead proposal writing with Aaron and Chloe and Wes and Doug and Anil, Mark, Bret