



EXPANDING HORIZONS

WHERE CONSERVATION MEETS INNOVATION



SWCS 75TH INTERNATIONAL ANNUAL CONFERENCE
JULY 27-29, 2020 | WWW.SWCS.ORG/20AC

VIRTUAL CONFERENCE PROGRAM



Helping farmers protect their crops and the environment

Science, safety and stewardship are at the heart of our innovations that help farmers use less land, water and inputs while growing more. We work with farmers and applicators to ensure crop protection products are used in a safe and environmentally sustainable way. These activities help ensure we can meet our Good Growth Plan targets for 2025—specifically our commitment to enhance biodiversity and soil health on 3 million hectares of rural land annually.

For more information, please visit www.goodgrowthplan.com.

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TABLE OF CONTENTS

GENERAL INFORMATION

Conference Schedule in Brief	4
Welcomes and Volunteer Recognition	
Program Planning Committee Chair Message	5
Iowa Chapter Message	6
Conference Volunteers	7
SWCS Board of Directors, Officers, and Staff	8

SPONSORS AND POSTER PRESENTATIONS

Corporate Partners	9
Conference Sponsors	10
Poster Presentations	11

CONFERENCE PROGRAM

Monday Schedule and Events	14-20
Tuesday Schedule and Events	21-26
Symposia Sessions	27-35
Wednesday Schedule and Events	36-41
Symposia Sessions	42-51
2020 SWCS Awards and Scholarships	52-60
SWCS Conference Sites and Chairs	61

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CONFERENCE SCHEDULE IN BRIEF

Times listed below are Central Time.

All sessions are included with conference registration, unless otherwise indicated.

MONDAY, JULY 27

9:00 AM – 1:00 PM	*Workshop 1: Training to Use Partial Budget Analysis to Estimate Soil Health Economic Outcomes and Data Collection Methods for NTT and COMET Tools
9:00 AM – 1:00 PM	*Workshop 2: Watershed Tools at Your Fingertips
9:00 AM – 1:00 PM	Professional and Chapter Development Sessions
9:00 AM – 12:30 PM	ARCSE Annual Meeting (<i>Partner Event</i>)
9:00 AM – 1:00 PM	CEAP Watershed Assessment Studies Annual Meeting (<i>Partner Event</i>)
11:00 AM – 1:00 PM	*Workshop 3: WiNning Strategies for Navigating USAJobs and Building Resumes
1:00 PM – 2:30 PM	State of the Society Address to the House of Delegates and Regional Sessions (<i>For Chapter Leaders and Members</i>)
1:00 PM – 2:30 PM	WiN Annual Meeting (<i>Partner Event</i>)
2:30 PM – 4:00 PM	Agriculture Innovation Agenda Panel
4:00 PM – 5:00 PM	Evening Social

**Not included in conference registration. Additional fees apply. Registration by July 15 was required.*

TUESDAY, JULY 28

9:00 AM – 10:45 AM	SWCS Conference Opening, Syngenta Keynote Sponsor, and Pritchard Keynote Panel
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 24-26)
12:30 PM – 1:00 PM	Lunch Break
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 24-26)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 24-26)
4:30 PM – 5:30 PM	Evening Social

WEDNESDAY, JULY 29

8:00 AM – 9:00 AM	Morning Social
9:00 AM – 10:45 AM	Plenary Sessions
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 39-41)
12:30 PM – 1:00 PM	Lunch Break
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 39-41)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 39-41)



PROGRAM PLANNING COMMITTEE CHAIR MESSAGE

Welcome to the 75th International Annual Conference of the Soil and Water Conservation Society (SWCS). This year's conference will be our first virtual conference as we celebrate our 75-year history.

The conference theme, *Expanding Horizons: Where Conservation Meets Innovation*, evokes images of the expansive views of the region and the deep and varied soil horizons that make Iowa's farmland some of the most productive in the world. This year's theme also speaks to the broadening of individual perceptions and experiences as attendees discover new concepts, partners, and advancements in soil and water research.

The *Expanding Horizons: Where Conservation Meets Innovation* conference begins Monday, July 27, with a full day of workshops in the morning and early afternoon followed by an Agriculture Innovation Agenda panel and a virtual social. On Tuesday, July 28, don't miss the conference kickoff, including keynote sponsor Syngenta and the Pritchard keynote panel. Throughout the conference, symposia, oral presentations, and poster presentations will explore the following special topics:

- Applied Data in Agriculture
- Back to the Future
- Edge-of-Field Practices and Monitoring
- The Producer and the Plot

Additionally, three virtual tours are offered Wednesday: Agriculture in an Ever-Changing World, Growing Urban Agriculture in Postindustrial Communities, and Restoration of Impacted Landscapes. The Society strives to provide its diverse membership a range of technical and practical sessions.

I have the honor of being program planning committee chair and have been impressed by the quality and breadth of the 2020 submissions. Our virtual platform will provide the opportunity to engage in nearly 200 symposia, oral presentations, and posters this year. The mobile app also makes it easy to ask presenters questions, connect with other attendees, and reach out to old friends.

This conference is made possible by the many member volunteers, SWCS staff, and sponsors who have volunteered their time and talents. Special thanks to members of the Iowa Chapter, this year's host chapter. I want to extend my personal thanks to all who have helped make this a successful conference and wish Katie Flahive all the best as she assumes the chair for the 76th annual conference next year.

We hope you enjoy your time during the virtual conference and come away inspired and with new concepts and understandings to help protect our water and soil resources!



Peter Tomlinson, 2020 Program Planning Committee Chair
Kansas State University

WELCOME TO (VIRTUAL) IOWA

The Iowa Chapter of the Soil and Water Conservation Society is excited to welcome you to an unprecedented 2020 SWCS International Annual Conference held in an online format. While we are disappointed that we are unable to host our members and our out-of-state community in Des Moines this year, we are glad that this format enables you to remain safe at home during this extraordinary time.

The State of Iowa spans 36 million acres in the heart of the Midwest, with approximately 85% of that land used for agriculture production. These 30.6 million acres are managed by 85,300 farm operations. Des Moines, our host city and largest metro area in the state, rests on some of the most productive soils in the state and is surrounded by farms. Iowa leads the nation in corn production and is second in soybean production. On the livestock side, Iowa is the highest producer of eggs and hogs. Within the state there are eight distinct landform regions, formed by the effects of two separate glacial periods. Iowa also ranks 2nd in wind energy installed capacity, and generates enough electricity to power equal to more than 2 million average American homes.

Normally, this welcome message is a space for the chapter president to introduce what you will see, hear, and experience from the host state for the conference. I would have reminded you to bring sunscreen on a tour to see an award-winning farm that boasts several conservation practices and serves as a model for how a suite of conservation practices can work together to transform a farm into holistic agroecosystem. I would have also reminded you to grab a free beer at the opening reception that is made with cover crops in Iowa, courtesy of the Iowa Chapter. Unfortunately, we cannot send a beer to your home—we checked—but we can provide a virtual showcase of Iowa's agriculture and recreation, as well as encourage critical discussion regarding the future of our soil and water resources through virtual social rooms during the next three days.

We will have a social room that will **tour innovative urban conservation practices** in Polk County, Iowa. The Iowa Department of Natural Resources (DNR) will also have a one-hour session that **takes you out on Iowa's trails and in Iowa's lakes and streams**. The Iowa DNR-managed state park system is celebrating its 100th anniversary this year! We invite you to participate in a discussion regarding the complexity of soil and water's impacts on society and to discuss the critical issues that often arise in the quest for equity and access to clean water with **Pulitzer-prize winner and reporter for the *Storm Lake Times* Art Cullen, The *Des Moines Register's* Donnelle Eller, and The *Gazette's* Erin Jordan**. Is the art and science of beer more your style? SingleSpeed Brewing in Cedar Falls, Iowa, will give you **an exclusive tour of their brewing facility** and discuss what makes Iowa-made beer so delicious.

We hope that this conference inspires you to make a trip out to Iowa in the future to experience our land, water, and wildlife. In the meantime, please enjoy this conference and stay safe and healthy.

Hanna Bates, President, Iowa Chapter
Program Coordinator, Iowa Water Center



CONFERENCE VOLUNTEERS

ANNUAL CONFERENCE PROGRAM PLANNING COMMITTEE

Peter Tomlinson, Kansas State University
Chair

Katie Flahive, US Environmental Protection Agency
Incoming Chair

Courtney Allen, SWCS
Event and Professional Development Director/Executive Assistant to the CEO

Cheryl Simmons, USDA NRCS
International Committee Liaison

Jorge Delgado, USDA ARS
JSWC Editorial Board Liaison

Rebecca Fletcher, USDA NRCS
Professional and Chapter Development Committee Liaison

Andrew Sharpley, University of Arkansas
Science and Policy Committee Liaison

Francisco Arriaga, University of Wisconsin-Madison
Soil Science Society of America Liaison

TECHNICAL TEAM LEADERS

Maysoon Mikha, USDA ARS
• *Adaptive Management of Conservation Efforts*

Heidi Ackerman, Iowa State University
• *Back to the Future*
• *The Producer and the Plot*

Andrew Sharpley, University of Arkansas
• *Conservation Economics and Policy*
• *The Producer and the Plot*

Deanna Osmond, North Carolina State University
• *Conservation in Organic, Specialty, Small-Scale, or Urban Agriculture*
• *Edge-of-Field Practices and Monitoring*

Skye Wills, USDA NRCS
• *Conservation Models, Tools, and Technologies*
• *Applied Data in Agriculture*

Hanna Bates, Iowa Water Center
• *Outreach, Education, and Community Engagement*

Linda Prokopy, Purdue University
• *Social Sciences Informing Conservation*

DeAnn Presley, Kansas State University, and **Peter Tomlinson**, Kansas State University
• *Soil Health Resources, Indicators, Assessment, and Management*

Katie Flahive, US Environmental Protection Agency
• *Water Resources Assessment and Management*

SWCS IOWA CHAPTER LIAISONS

Hanna Bates, President, Iowa Water Center

Steve Konrady, President Elect, Iowa Department of Natural Resources

Heidi Ackerman, Past President, Iowa State University

Greg Townley, Secretary, USDA NRCS

Alan Lauver, Treasurer, USDA NRCS

Larry Beeler, Central Area Chair, Retired

Josh Balk, Northeast Area Chair, Iowa Department of Natural Resources

Olivia LaGrange, Southeast Area Chair, Stanley Consultants

Carolyn Schwartz, Southwest Area Chair, USDA NRCS

Clare Lindahl, Membership Chair, Soil and Water Conservation Society

Anna Golightly, Information Chair, Madison County Soil and Water Conservation District

Sarah Ham, Social Media Chair, USDA NRCS

Additional Planning Committee Members: Jonathan Swanson, Paul Miller, Jennifer Welch, Amanda Brown, Larry Jones, Kate Giannini, Laurie Nowatzke, Clint Miller, Tom O'Connor, and Duane Miller

**Thank you to all who assisted
in planning the 75th SWCS
International Annual Conference!**

SWCS BOARD OF DIRECTORS, OFFICERS, AND STAFF

OFFICERS

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Vice Chair: Wendi Goldsmith

Secretary: Dale Threatt-Taylor

Treasurer: Don Wysocki

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Wendi Goldsmith 2017–2020

Incoming: Ellen Gilinsky 2020–2023

NORTH CENTRAL REGION

Rebecca Power 2018–2021

NORTHWEST REGION

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Incoming: Keith Berns 2020–2023

SOUTHEAST REGION

Dale Threatt-Taylor 2019–2022

SOUTHWEST REGION

Steve Kadas 2019–2022

AT-LARGE

Rex Martin 2018–2021

Bruce Knight 2017–2020

Jason Weller 2017–2020
2020–2023

Jane Hardisty 2019–2022

Incoming: Jerry Hatfield 2020–2023

SWCS HEADQUARTERS STAFF

Clare Lindahl, *CEO*

Courtney Allen, *Event and Professional Development
Director/Executive Assistant to the CEO*

Annie Binder, *Director of Publications/Editor*

Erika Crady, *Membership and Chapter Coordinator*

Catherine DeLong, *Special Projects and Policy Director*

Joe Derry, *Student Summer Intern*

Joe Otto, *Project Manager/Historian*

Jody Thompson, *Editorial Assistant*



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BUILD COMMUNITY**

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Clean Water
For Life**

CORPORATE PARTNERS

SWCS is pleased to have the following organizations as Corporate Partners in the effort to advance soil, water, and related natural resource conservation to achieve sustainability.

PLATINUM PARTNER



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BRONZE PARTNERS



Are you interested in having your organization recognized for its dedication to natural resources protection and sustainability? Contact Clare Lindahl through the conference app or at clare.lindahl@swcs.org to discuss all the benefits of becoming an SWCS Corporate Partner.

CONFERENCE SPONSORS

Thank you to our 75th SWCS International Annual Conference sponsors!

Visit this year's conference sponsor exhibit booths in the **Exhibit Hall** tab of the online platform and request follow up or schedule a meeting with them in their individual sponsor profiles within the **Sponsors** tab during the event.

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SUPPORTER



POSTER PRESENTATIONS

Posters will be showcased within the **Poster Presentations** tab of the online platform for the duration of the event.

ADAPTIVE MANAGEMENT OF CONSERVATION EFFORTS

1. Cover Crops at Work: Impact of Winter Cover Crops on Tile-Drain Water Quality and Soil Organic Matter at the Franklin Research and Demonstration Farm in Lexington, Illinois
2. Dynamic Soil Properties: Snapshot in Time for Meade County, South Dakota
3. Poultry Farm Pollinator Habitat Seeding
4. Recent Advances in AgCROS, a Network of Networks that Could Contribute to Assessments of Conservation Practices across the USA and Internationally
5. Winter Cover Crop Effects on Nitrogen Leaching Estimated from Cost-Share Enrollment Data, Satellite Remote Sensing, and SWAT Modeling

APPLIED DATA IN AGRICULTURE

6. Augmented Reality as a Tool for Technology-Driven Conservation
7. Daily Erosion Project and STRIPS: A Promising Partnership for Soil Conservation Research
8. Precision Irrigation for Golf Courses Using Sensor and Mapping Technologies
9. Valuing Ecosystem Services under Contrasting Land Use Scenarios in the Grand River Basin, Iowa and Missouri

CIG SHOWCASE

10. Deploying the Living Mulch Crop Production System to Build Soil Health
11. Developing a Decision Tool to Assist Management of Prescribed Fires in the Flint Hills Region in Order to Reduce Smoke Impact on Ambient Ozone
12. Field and Laboratory Evaluations of Prototype Edge-of-Field Runoff Monitoring Systems to Support NRCS Conservation Investments and On-Farm Decision Making: Lessons Learned
13. Minding the Microbes: The Adoption of Soil Health Management Techniques by Oklahoma Wheat Producers

14. Moving Forward with a National Comprehensive Soil Health Assessment Framework
15. Plasma Arc Venturi Technology for Agricultural Waste Treatment: A 2017 USDA CIG Project Summary
16. Soil Moisture is a Major Obstacle to Cover Cropping on Water Limited Farms in South Texas
17. Subtropical Soil Health Initiative
18. Wheat Double Cropping Systems to Improve Soil Health

CONSERVATION ECONOMICS AND POLICY

19. Cement-Modified Soil on Temporary Sites in Energy Applications: Are Remediation Practices Satisfactory?
20. Scaling Conservation Effort: An Economic Analysis of Private and Social Benefits from Cover Crops Adoption in Two Indiana Watersheds
21. Stimulating Soil Health: Perceptions and Barriers within Nebraska's Natural Resource Districts

CONSERVATION MODELS, TOOLS, AND TECHNOLOGIES

22. Application of New Geospatial Data and Tools to Inform Spatially Targeted Conservation
23. Comparing Surrogate to Full Water and Wind Erosion Model Simulations for Ranking Conservation Reserve Program (CRP) Offers
24. Daily Erosion Project II—Ephemeral Gully Initiation Point and Its Influence on Soil Erosion Estimation
25. Developing an Alternative to Current Agronomic Phosphorus Recommendations
26. Digital Soil Mapping the Missouri River Floodplain: A Pilot Study to Begin in 2020
27. Evaluation of Remote Sensing Indices for Differentiating Nitrogen Stress and Corn Yield
28. High Performance Soil Loss Estimation with Machine Learning and RUSLE2
29. Leveraging Geospatial Data to Support Conservation Planning through CART: Initial Observations and Next Steps

POSTER PRESENTATIONS

- 30. Mitigation of Antibiotic Resistance from Manure-Amended Crop Fields by Prairie Buffer Strips: Laboratory Flume Study
- 31. Water Erosion Prediction Project (WEPP) Model for NRCS Field Conservation Planning
- 32. Yield and Economic Assessment of a Cover Crop/Minimum Tillage Practice in Mid-South Corn/Soybean Rotation

CONSERVATION IN ORGANIC, SPECIALTY, SMALL-SCALE, OR URBAN AGRICULTURE

- 33. Ecological Agriculture Application with Winter Flooding

EDGE-OF-FIELD PRACTICES AND MONITORING

- 34. Can Stratified Soil Sampling Provide Insight into Edge-of-Field Phosphorus Losses?
- 35. Determination of Woodchip Media Hydraulic Properties for Denitrifying Bioreactor Design
- 36. Multiyear Precipitation Variations and Relationship with Nonpoint Source of Nitrogen and Phosphorous Contamination to Surface Waters
- 37. Optimal Hydraulic Retention Time to Balance Nitrate Removal Efficiency, Potential Greenhouse Gas Emissions, and Longevity in Pilot-Scale Woodchip Bioreactors

OUTREACH, EDUCATION, AND COMMUNITY ENGAGEMENT

- 38. Development and Use of an Annotated Bibliography as an Open Textbook for Soil and Water Conservation
- 39. Positioned for Success: Engaging Undergraduates through Building a Sense of Place
- 40. River Stories: Views from a Watershed
- 41. Watershed Mitigation Farm

SOCIAL SCIENCES INFORMING CONSERVATION

- 42. Developing Farmer Typologies to Inform Soil and Water Conservation Outreach in Iowa's Agricultural Landscapes.
- 43. Exploring Farmers' Perceptions of Agricultural Nutrient Loss Risk: Who Is "Accurate"?

SOIL HEALTH RESOURCES, INDICATORS, ASSESSMENT, AND MANAGEMENT

- 44. Can We Improve Soil Health and Recycle Soil Nitrogen by Amending Agricultural Soils with Crude Glycerin, a Biodiesel By-Product?
- 45. Cover Crop Termination Timing Impacts on Soybean and Maize Production in Northeast Arkansas
- 46. Cropland State and Transition Modeling of Impacts on Soil Health and Climate Resilience
- 47. Development of Soil Carbon within a Matrix of Restored Prairie on Former Agricultural Land
- 48. Long-Term Perennial Management and Cropping Effects on Soil Microbial Biomass for Claypan Watersheds
- 49. Long-Term Soil Health and Water Quality Impacts of Poultry Manure Application to Row Crops
- 50. Magnetic Properties of Agricultural Soils as a Proxy for Soil Organic Matter and Soil Health
- 51. Soil Microbial and Enzyme Activities Affected by Selected Land Management
- 52. Southwest Iowa NRCS Soils Their Undies to Show Off Soil Health

THE PRODUCER AND THE PLOT

- 53. Agriculture and Agri-Food Canada Living Laboratory Initiative
- 54. Empowering Farmers and Improving Farm Profitability with On-Farm Research and Demonstrations: Our Recipe for Success
- 55. Farmer-Led Research Provides Insight on Challenges and Opportunities with Cover Crops in Nebraska

WATER RESOURCE ASSESSMENT AND MANAGEMENT

- 56. Assessing Zeolite Amended Bioretention Media for Removing Nutrients and Metals from Stormwater
- 57. NRCS and Bureau of Reclamation Collaboration for Watersmart
- 58. Specific Method for the Detection of Viable *E. Coli* Using Nanoparticle Immuno-Fluorescent Probes
- 59. Strategic Areawide Conservation Planning in Six HUC 12 Watersheds in Vermont



United States Department of Agriculture

Natural Resources Conservation Service

We deliver conservation solutions so agricultural producers can protect natural resources and feed a growing world.



Contact your local NRCS office to discuss conservation planning and financial assistance options for your farm.

Natural Resources Conservation Service

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MONDAY, JULY 27

SCHEDULE AND EVENTS

SCHEDULE

Times listed below are Central Time.

9:00 AM – 1:00 PM	*Workshop 1: Training to Use Partial Budget Analysis to Estimate Soil Health Economic Outcomes and Data Collection Methods for NTT and COMET Tools
9:00 AM – 1:00 PM	*Workshop 2: Watershed Tools at Your Fingertips
9:00 AM – 1:00 PM	Professional and Chapter Development Sessions
9:00 AM – 12:30 PM	ARCSE Annual Meeting (Partner Event)
9:00 AM – 1:00 PM	CEAP Watershed Assessment Studies Annual Meeting (Partner Event)
11:00 AM – 1:00 PM	*Workshop 3: Winning Strategies for Navigating USAJobs and Building Resumes
1:00 PM – 2:30 PM	State of the Society Address to the House of Delegates and Regional Sessions (For Chapter Leaders and Members)
1:00 PM – 2:30 PM	Win Annual Meeting (Partner Event)
2:30 PM – 4:00 PM	Agriculture Innovation Agenda Panel
4:00 PM – 5:00 PM	Evening Social

**Not included in conference registration. Additional fees apply. Registration by July 15 was required.*

WORKSHOPS

Workshops are not included in conference registration. Additional fees apply. Registration by July 15 was required.

Workshop 1: Training to Use Partial Budget Analysis to Estimate Soil Health Economic Outcomes and Data Collection Methods for NTT and COMET Tools

9:00 AM – 1:00 PM CT

Instructors: Michelle Perez, American Farmland Trust and Soil Health CIG Project Leader; Florence Swartz, Consultant and Retired USDA NRCS

This training will share methods and materials developed by American Farmland Trust for a 2018 USDA Conservation Innovation Grant (CIG) that enables conservationists and farmers to quantify economic, water quality, and climate outcomes of soil health practices. Eight two-page case studies have been developed using these methods and can be found at <https://farmlandinfo.org/publications/soil-health-case-studies/>.

The economic methods involve development of an Excel-based partial budget analysis calculator for quantifying the benefits and costs experienced by “already soil health successful farmers,” (i.e., those that had four or more years of economic success with one or more soil health practice). The methods were tailored to analyze California almond production, Midwest corn–soybeans, and New York diversified crop rotations. Note this training will focus on row crop operations rather than almonds. The training will include steps on how to modify the materials for use with slightly different production systems and locations than those the project was initially developed for.

The CIG project used the USDA's Nutrient Tracking Tool and the USDA's COMET-Farm Tool to quantify the water quality and climate outcomes of selected fields with implemented soil health practices. To enable conservationists to collect data from farmers ahead of using both tools, an Excel-based questionnaire was developed. The training will include steps to modify the questionnaire for use with similar-enough production systems and

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MONDAY, JULY 27

new locations. In addition, a technique to analyze the greenhouse gas reduction effect of already-adopted soil health practices from COMET results exported to Excel will be shared.

Finally, tips will be shared on how to identify and secure farmers that satisfy the criteria for “already being soil health successful,” and then to write two-page “Soil Health Economic and Environmental Case Studies” to disseminate the results of the economic, water quality, and environmental analyses.

Workshop 2: Watershed Tools at Your Fingertips

9:00 AM – 1:00 PM CT

Instructors: Rob Davis, Minnesota Board of Water and Soil Resources and Houston Engineering; Matt Drewitz, Minnesota Board of Water and Soil Resources and Houston Engineering; Nancy Grudens-Schuck, Iowa State University; Lisa Schulte-Moore, Iowa State University; Neh Batwara, Iowa State University; Linda Shenk, Iowa State University; Kristie Franz, Iowa State University; Bill Gutowski, Iowa State University; Nick Gans, Iowa State University; Arie Sirotiak, Iowa State University

This hands-on, interactive workshop will feature three different watershed tools. The People in Ecosystems/Watershed Integration (PEWI) tool is a simple web-based educational game designed to help people understand the impacts of land use. PEWI is open-source and can be used with students and stakeholders to explore how different land use types and configurations result in tradeoffs in ecosystem service outcomes. The Prioritize, Target, and Measure Application is a desktop and web application tool that translates landscape goals to best management practices. The tool enables practitioners to build prioritized and targeted implementation scenarios, measure cost-effectiveness, and report the results to pursue funds for project implementation. The third tool, Watershed Community, is a computer simulation model to help community groups foster small-scale collaborative conservation projects. Utilizing social science research and storytelling techniques, this tool supports collaborative community building around water-, soil-, and pollinator-related conservation efforts. Join the workshop to experience these unique watershed tools and return to your workspaces, communities, and farms equipped with new knowledge and resources.

Workshop 3: WiNning Strategies for Navigating USAJobs and Building Resumes

11:00 AM – 1:00 PM CT

Instructors: Kristie McKinley, USDA NRCS and WiN President; Candi Sanders, FPAC-BC; Uretha Bostic, FPAC-BC and WiN South East Regional Representative; Sandi Kreke, USDA NRCS and Past WiN President; Heather Medina Saucedo, USDA NRCS and WiN Executive Vice-President; Jeanne Hamilton, USDA NRCS and WiN Northern Plains Regional Representative

Learn how to successfully apply for your next federal job with expert tips for navigating through USAJobs and creating custom resumes from a Senior Human Resources Specialist with the Farm Production and Conservation (FPAC) Business Center and Women in NRCS's (WiN) Past President. Hiring managers from USDA NRCS will share best approaches and common mistakes to avoid to help you land your next job.

SWCS EVENTS

Professional and Chapter Development Sessions

9:00 AM – 1:00 PM CT

The Professional and Chapter Development sessions are for the growth of professionals and chapters. This year's professional development session is hosted by Women in NRCS (WiN) and will feature successful women in conservation career panels and discussion. This year's chapter development sessions will feature lightning presentations of the activities of this year's chapter achievement award winners.

Successful Women in Conservation Career Panel

9:00 AM – 11:00 AM CT

Moderator: Heather Hinson, USDA NRCS and WiN

Presenters: Catherine "Cadie" Pruss, USDA NRCS and National Federal Women's Special Emphasis Program Manager; Jeanne Hamilton, USDA NRCS and WiN Northern Plains Regional Representative; Karma Anderson, USDA NRCS; Monica Wymer, USDA NRCS and WiN Midwest Regional Representative; Kasey Taylor, USDA NRCS and WiN Leadership Team Member; Uretha Bostic, Farm Production and Conservation Business Center and WiN South East Regional Representative

MONDAY, JULY 27

Chapter Achievement Award Winner Lightning Presentations

11:00 AM – 1:00 PM CT

Moderator: Susan Meadows, USDA NRCS

Presenters: John McCann, California-Nevada Chapter; Krista Kirkham, Illinois Chapter; Curtis Knueven, Indiana Chapter; Hanna Bates and Heidi Ackerman, Iowa Chapter; Marni Thompson, Montana Chapter

State of the Society Address to the House of Delegates and Regional Sessions (For Chapter Leaders and Members)

1:00 PM – 2:30 PM CT

SWCS leadership will deliver the State of the Society Address to the House of Delegates. SWCS Regional Directors will lead local discussion with chapter leaders and members in regional virtual breakout rooms. Don't miss this opportunity to guide the future direction of your professional society.

Agriculture Innovation Agenda Panel

2:30 PM – 4:00 PM CT

Moderator: William Hohenstein, USDA Office of Energy and Environmental Policy

Presenters: Scott Hutchins, USDA Deputy Under Secretary for Research, Education, and Economics; Bill Northey, USDA Under Secretary for Farm Production and Conservation; Bruce Kettler, Indiana State Department of Agriculture; Steve Hagen, Dagan; Jonathan Coppess, Gardner Agriculture and University of Illinois

Earlier this year, the USDA launched the Agriculture Innovation Agenda, a department-wide initiative with a goal of increasing US agricultural production by 40% while cutting the environmental footprint of US agriculture in half by 2050. To do so, the initiative will align public and private research efforts, integrate the latest innovative conservation technologies and practices into USDA programs, and improve USDA data collection and reporting. SWCS is partnering with USDA to assemble a panel to discuss items within the agenda pertinent to the conservation community.

AGRICULTURE INNOVATION AGENDA PANELISTS



William Hohenstein, Director of USDA's Office of Energy and Environmental Policy

William Hohenstein is the Director of USDA's Office of Energy and Environmental Policy (OEEP), within the Office of the Chief Economist. OEEP serves as a focal point for the department's energy, environmental markets, and climate change activities.

Before working at USDA, Hohenstein served as a Division Director in EPA's National Center for Environmental Economics. Prior to that, Hohenstein served in the Climate Change Division of EPA's Office of Policy Planning and Evaluation. He represents the United States at international climate change negotiations and has served as a US representative to the Intergovernmental Panel on Climate Change (IPCC). Hohenstein has a BS in natural resource management from Cook College, Rutgers University, and a MEM in resource economics and policy from Duke University's School of Forestry and Environmental Studies.



Scott Hutchins, USDA Deputy Under Secretary for Research, Education, and Economics

Scott Hutchins is the Deputy Under Secretary for the US Department of Agriculture's Research, Education, and Economics mission area (REE), which is comprised of the Agricultural Research Service, Economic Research Service, National Agricultural Statistics Service, and the National Institute of Food and Agriculture. Hutchins also leads the USDA Office of the Chief Scientist (OCS) to coordinate and communicate science topics across USDA and the scientific community. Together, REE and OCS have unique federal leadership responsibility to advance agriculture research, extension, and education.

A board-certified entomologist and adjunct professor of entomology at the University of Nebraska–Lincoln, Hutchins is a past president of the Entomological Society of America (ESA), ESA fellow, and honorary member of ESA. He

MONDAY, JULY 27

AGRICULTURE INNOVATION AGENDA PANELISTS (CONTINUED)

received a BS in entomology from Auburn University, MS in entomology from Mississippi State University, and PhD in entomology from Iowa State University.

Hutchins' research focused on integrated pest management, particularly addressing the impact of insect-induced injury on crop physiology for developing economic-injury levels and action thresholds. Hutchins joined USDA after retiring from the private sector where he served in various technical and leadership roles focused on agricultural innovation and technology development.



Bill Northey, USDA Under Secretary for Farm Production and Conservation

Bill Northey has served as Under Secretary for Farm Production and Conservation since February of 2018. Previous to leading the Farm Production and Conservation Mission Area overseeing the Natural Resources Conservation Service, the Risk Management Agency, and the Farm Service Agency, Northey served as the Iowa Secretary of Agriculture from 2006 to 2018.

A fourth-generation farmer, Northey's experience and depth of knowledge also brought him to serve as a commissioner of the Dickinson County Soil and Water Conservation District, and as president and chairman of the National Corn Growers Association. He was also president of the National Association of State Departments of Agriculture from September of 2011 through September of 2012.

Northey has a bachelor's degree in agriculture business from Iowa State University and an MBA from Southwest Minnesota State University.



Bruce Kettler, Director, Indiana State Department of Agriculture

Bruce Kettler is the Director of the Indiana State Department of Agriculture (ISDA), appointed by Governor Eric Holcomb on January 8, 2018, as well as the Director of Agribusiness Development for the Indiana Economic Development Corporation. Kettler was appointed to Governor Holcomb's cabinet in December of 2019. He joins the department with over 30 years of agricultural leadership experience and knowledge that spans from production agriculture and sales, to community and industry relations.

Kettler grew up in western Ohio and developed a passion and appreciation for agriculture at an early age. After serving as the National FFA Vice President, he attended The Ohio State University and graduated with a bachelor's degree in agronomy with emphasis in agricultural business.

He began his professional career in 1987 at Dow AgroSciences where he spent 17 years working in a variety of roles. In 2006, he joined Beck's Hybrids as a sales consultant and worked his way up to Area Team Leader, Field Sales Manager and then Director of Public Relations, the position he held prior to joining ISDA. Bruce is a 2012 graduate of the Indiana Agricultural Leadership Program.

At ISDA, his main priorities include agricultural advocacy, economic development, youth development, and environmental stewardship. He is married to Tammy and has two children and three grandchildren.



Steve Hagen, Chief Operating Officer and Senior Scientist, Dagan

Steve Hagen is the Cofounder, Chief Operating Officer, and Senior Remote Sensing Scientist at Dagan, Inc, a new company that provides cutting-edge agricultural and environmental data services to support the expansion of regenerative agriculture. Hagen combines expertise in the extraction of land surface information and interpretation of large geospatial datasets (particularly remote sensing data) with strengths in leadership and critical thinking to head Dagan's research team in the development of effective technology that improves environmental outcomes in agriculture and forestry.

MONDAY, JULY 27

AGRICULTURE INNOVATION AGENDA PANELISTS (CONTINUED)



Jonathan Coppess, Director, Gardner Agriculture Policy Program, and Assistant Professor, University of Illinois

Jonathan Coppess is on faculty at the University of Illinois at Urbana-Champaign, director of the Gardner Agriculture Policy Program and author of *The Fault Lines of Farm Policy: A Legislative and Political History of the Farm Bill*. Previously, he served as Chief Counsel for the Senate Committee on Agriculture, Nutrition and Forestry, Administrator of the Farm Service Agency at USDA, and Legislative Assistant to Senator Ben Nelson. Coppess grew up on his family's farm in Western Ohio, earned his bachelor's from Miami University in Oxford, Ohio, and his Juris Doctor from The George Washington University Law School in Washington, DC.

Evening Social

4:00 PM – 5:00 PM CT

Join your fellow conference attendees in one of our many social rooms. These rooms offer time for networking and interaction among the learning and dialogue.

Room 1 Brewing Up Conservation in Iowa: Clean Water and Craft Beverages

Moderator: Josh Balk, Iowa SWCS Chapter

Presenters: Rachel Beck, SingleSpeed Brewing Company; Joe Bolick, University of Northern Iowa

Clean water, conservation, and craft beverages all go hand-in-hand. Grab your favorite brew and take a virtual tour of an award-winning local Iowa brewery. SingleSpeed Brewing has been a staple in the Cedar Valley since they opened their doors of their 3 barrel brewhouse in 2012. In 2016, they expanded their operations and opened a second taproom in a historically renovated WonderBread building. Sustainability has been a cornerstone for SingleSpeed and earned them the first Platinum Level Iowa Green Brewery Certification from the Iowa Waste Reduction Center. What is that? Well, you'll have to tune in while our guest presenters Rachel Beck and Joe Bolick enlighten you on these crafty conservation efforts. If you're looking for a suggestion on a brew to enjoy during this session, this last month SingleSpeed released Cover Charge, a Hazy Pale Ale that incorporates two commonly used cover crops into the recipe: wheat and oats. This great beer aims to boost momentum for the future of clean water and healthy soil with a portion of the revenue from each Cover Charge sold supporting water quality improvement and carbon sequestration. Cheers to conservation!

Rachel Beck serves as the Sustainability Coordinator, Social Media Manager, and Brand Ambassador at SingleSpeed Brewing Company. She received her bachelor's degree in earth science from the University of Northern Iowa.

Joe Bolick is the Director of the Iowa Waste Reduction Center at the University of Northern Iowa and also leads the Iowa Green Brewery Certification program. He received his bachelor's degree in marketing from the University of Northern Iowa and his master's degree in communications and leadership studies from Gonzaga University.

Room 2 Iowa Urban Conservation Tour

Moderator: John Swanson, Polk County Public Works

Presenters: Amanda Brown, Polk County Conservation; Jennifer Welch, Polk Soil and Water Conservation District; Paul Miller, Iowa Department of Agriculture and Land Stewardship

This tour will provide an overview of urban conservation practices in Polk County, Iowa, in the heart of the State of Iowa.

Virtual Stop 1 – Prairie Trail Development in Ankeny

This stop will highlight the premier stormwater management development in central Iowa, in one of the nation's fastest growing cities. Through a series of wetlands, ponds, and other best management practices, the Prairie Trail development was able to find ways to achieve a balance between urban development and conservation.

Virtual Stop 2 – Lower Fourmile Creek Greenway

Developed in the 1950s and 1960s, the neighborhoods along lower Fourmile Creek have been devastated by

MONDAY, JULY 27

flooding and stormwater issues. To correct these past mistakes a multi-agency effort has helped remove over 200 homes from the floodplain, and the area is being converted to a natural restored floodplain with native prairie, wetlands, and stabilized stream banks.

Virtual Stop 3 – Urban Wetlands

Oxbow restorations and constructed stormwater wetlands have been a key practices to utilizing natural areas to improve water quality in the Des Moines metro. With over 25 wetlands installed in the past five years across central Iowa, local coordinators seek to bring together local public spaces with water quality opportunities.

Virtual Stop 4 – Gray's Station Development

Located on the banks of the Des Moines River and in the heart of downtown Des Moines, the Grays Station Development project is bringing redevelopment and modern stormwater management together. With significant environmental concerns and poor stormwater management, this project was able to create a large wetland system that provides unique resources for future residents.

Room 3 Two Hughs and a Lie

Moderator: Joe Otto, SWCS

Play Two Hughs and a Lie in which SWCS Historian Joe Otto will share stories with attendees about Society founder Hugh Hammond Bennett. Attendees will be able to use polling to weigh in on the accuracy of the stories presented. See just how much you and your colleagues know about the father of soil conservation.

Room 4 Dialogue and Drinks (LIMIT 20 ATTENDEES)

Moderator: Catherine DeLong, SWCS

This will be a moderated session that allows attendees to share their perspectives on technologies in agriculture that could advance conservation. Grab your drinks and come early because this session is first come, first served.

PARTNER EVENTS

Association of Retired Conservation Service Employees (ARCSE) Annual Meeting

9:00 AM – 12:30 PM CT

The Association of Retired Conservation Service Employees (ARCSE) will hold a special virtual ARCSE

75th Anniversary Conference Experience this year. The online event will include a presentation by the SWCS historian, an exhibit of never-before-seen Hugh Hammond Bennett artifacts, a networking activity, and state and national updates from ARCSE, NRCS, and SWCS representatives. A primary goal is to network past, present, and next generation conservationists looking forward to the decades of work ahead, please join us! Registration is free for this event. More information can be found at www.arcse.org.

[View Agenda](#)

CEAP Watershed Assessment Studies Annual Meeting

9:00 AM – 1:00 PM CT

Please join USDA's Natural Resources Conservation Service (NRCS) and Agricultural Research Service (ARS) Conservation Effects Assessment Project (CEAP) scientists to learn about and discuss the CEAP Watershed Assessments in small watershed studies. This year's meeting will occur prior to the general SWCS conference program. Presentations in the CEAP meeting will feature ongoing ARS and university CEAP Watershed Assessments followed by a stakeholder engagement session on water and soil conservation assessment (to contribute to the new Five Year NP211 Water Availability and Watershed Management Action Plan) needs and research priorities. If you have an interest in outcomes and documenting benefits of conservation, please join us to provide your input into future efforts!

[View Agenda](#)

WiN Annual Meeting

1:00 PM – 2:30 PM CT

Women in the Natural Resources Conservation Service (WiN) will be hosting their annual organization meeting via Zoom. The annual meeting will go over the highlights of the year. If you are interested in joining, this session this is a good time to hear about the recent activities that WiN is doing. The Mission for WiN is "to provide women with training, opportunities, and mentoring to develop into their fullest professional potential."

[View Agenda](#)

Monday, July 27, 2020
Central Time

	Workshops			
9:00 AM - 1:00 PM	Workshop 1: Training to Use Partial Budget Analysis to Estimate Soil Health Economic Outcomes and Data Collection Methods for NTT and COMET Tools - <i>Michelle Perez, American Farmland Trust and Soil Health CIG Project Leader; Florence Swartz, Consultant and Retired USDA NRCS</i> (Additional Fees Apply, Registration by July 15 Required)			
9:00 AM - 1:00 PM	Workshop 2: Watershed Tools at Your Fingertips - <i>Rob Davis, Minnesota Board of Water and Soil Resources and Houston Engineering; Matt Drenitz, Minnesota Board of Water and Soil Resources and Houston Engineering; Nancy Grudens-Schuck, Iowa State University; Lisa Schulte-Moore, Iowa State University; Neb Batwara, Iowa State University; Linda Shenk, Iowa State University; Kristie Franz, Iowa State University; Bill Gutowski, Iowa State University; Nick Gans, Iowa State University; Arie Sirotiak, Iowa State University</i> (Additional Fees Apply, Registration by July 15 Required)			
11:00 AM - 1:00 PM	Workshop 3: WiNning Strategies for Navigating USAJobs and Building Resumes - <i>Kristie McKinley, USDA NRCS and WiN President; Candi Sanders, FPAC-BC; Uretha Bostic, FPAC-BC and WiN South East Regional Representative; Sandi Kreke, USDA NRCS and Past WiN President; Heather Medina Saucedo, USDA NRCS and WiN Executive Vice-President; Jeanne Hamilton, USDA NRCS and WiN Northern Plains Regional Representative</i> (Additional Fees Apply, Registration by July 15 Required)			
	SWCS Events			
9:00 AM - 1:00 PM Professional and Chapter Development Sessions	9:00 AM - 11:00 AM Successful Women in Conservation Career Panel - <i>Heather Hinson, USDA NRCS and WIN</i>		11:00 AM - 1:00 PM Chapter Achievement Award Winner Lightning Presentations - <i>Susan Meadows, USDA NRCS</i>	
1:00 PM - 2:30 PM	State of the Society Address to the House of Delegates and Regional Sessions (For Chapter Leaders and Members)			
2:30 PM - 4:00 PM	Agriculture Innovation Agenda Panel - <i>William Hobenstein, USDA OEEP; Scott Hutchins, USDA Deputy Under Secretary for Research, Education, and Economics; Bill Northey, USDA Under Secretary for Farm Production and Conservation; Bruce Kettler, Indiana State Department of Agriculture; Steve Hagen, Dagan; Jonathan Coppess, Gardner Agriculture and University of Illinois</i>			
4:00 PM - 5:00 PM Evening Social	Room 1 Brewing Up Conservation in Iowa: Clean Water and Craft Beverages - <i>Josh Balk, Iowa SWCS Chapter</i>	Room 2 Iowa Urban Conservation Tour - <i>John Swanson, Polk County Public Works</i>	Room 3 Two Hughs and a Lie - <i>Joe Otto, Soil and Water Conservation Society</i>	Room 4 (LIMIT 20 ATTENDEES) Dialogue and Drinks - <i>Catherine DeLong, Soil and Water Conservation Society</i>
	Partner Events			
9:00 AM - 12:30 PM	Association of Retired Conservation Service Employees (ARCSE) Annual Meeting			
9:00 AM - 1:00 PM	CEAP Watershed Assessment Studies Annual Meeting			
1:00 PM - 2:30 PM	WiN Annual Meeting			

TUESDAY, JULY 28

SCHEDULE AND EVENTS

SCHEDULE

Times listed below are Central Time.

9:00 AM – 10:45 AM	SWCS Conference Opening, Keynote Sponsor Syngenta, and Pritchard Keynote Panel
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 24-26)
12:30 PM – 1:00 PM	Lunch Break
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 24-26)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 24-26)
4:30 PM – 5:30 PM	Evening Social



Paul Lasley, Iowa State University

Paul Lasley is a sociology professor at Iowa State University and has a role with university extension and research. Lasley's research focuses on the organization of US agriculture and how changes in agriculture affect rural communities. Upon starting

at Iowa State in 1981, Lasley created the Iowa Farm and Rural Life Poll. The longest running survey of its kind, the annual poll provides timely and relevant information on agriculture, conservation, and rural life.

Paul Lasley will share how diffusion of innovation and other sociological theories play a role in the adoption of new ideas and lessons learned from his experience on agricultural projects and programs throughout his career.



Linda Prokopy, Purdue University

Through literature reviews, surveys, interviews, and focus groups, Linda Prokopy has made a name for herself as an expert in how to encourage people (primarily farmers) to adopt environmentally friendly practices. She has published over 100 peer-reviewed

journal articles as well as several book chapters, feature articles, and data sets. Her highly cited publications have advanced research in the fields of water resources planning, adoption of conservation behaviors and practices, climate change adaptation, and sustainable agriculture. Prokopy is a professor of natural resources social science at Purdue University in West Lafayette, Indiana. She is also Co-Director of the Natural Resources and Environmental Science interdisciplinary undergraduate degree, and Director of the Indiana Water Resources Research Center.

Linda Prokopy will discuss the factors that drive participation in conservation efforts from her global research efforts so we can collectively design new ideas and innovations to encourage engagement moving forward.

EVENTS

SWCS Conference Opening, Keynote Sponsor, and Pritchard Keynote Panel

9:00 AM – 10:45 AM CT

The Tuesday general session will be opened by SWCS CEO Clare Lindahl. This year's presenting sponsor, Caydee Savinelli from Syngenta, will address the audience, followed by the Pritchard Keynote Panel.

Moderator: Clare Lindahl, SWCS

Presenters: Paul Lasley, Iowa State University; Linda Prokopy, Purdue University; Roger Wolf, Iowa Soybean Association; Tony Maxwell, USDA NRCS

Diffusing Conservation Innovations

Innovation is pertinent to advancing conservation. New ideas, tools and technologies are regularly unveiled, but just because an idea is new or even good does not mean it will be adopted. This year's Pritchard Panel embraces a core value of SWCS and conservation, the value of an interdisciplinary approach to explore opportunities to advance conservation innovations from your own watershed to the nation and world.

TUESDAY, JULY 28



Roger Wolf, Iowa Soybean Association

Roger Wolf was raised on a farm and is a lifelong, native Iowan. He holds a bachelor's degree in geography from the University of Iowa. In the late 1980s and early 1990s, he served as Environmental Specialist and Watershed Project Coordinator with the Iowa Department of Agriculture

and Land Stewardship. In the mid-1990s he was an entrepreneur and watershed management consultant. Today, as the Director of Innovation and Integrated Solutions with Iowa Soybean Association's Research Center for Farming Innovation, he works to advance innovative programming that integrates knowledge development, enhanced cropping systems, and robust resource management with active farmer and collaborator engagement, leading to more resilient agricultural environments. Wolf is an active proponent of the One Water Management approach, which fosters leadership from conservation, agriculture, and the water sector to capitalize on innovative ways of reducing nutrient pollution while improving natural resource management and resiliency in Iowa and the Mississippi River Basin.

Roger Wolf will discuss factors that have led to the Iowa Soybean Association's leadership in on the ground conservation including fostering urban-ag partnerships, getting to scale with watershed planning, and their pilot effort to develop and test the concept of watershed diffusion hubs, a model to expand and scale up watershed projects. Wolf will also touch on their work to advance new environmental finance mechanisms.



Tony Maxwell, USDA NRCS

Tony Maxwell is the USDA NRCS District Conservationist in Washington, Iowa. A native of Mount Pleasant, he has worked in Iowa his entire life. Maxwell graduated from Iowa State University with a Bachelor of Science degree in agricultural studies. He started his career

with the Soil Conservation Service in Audubon, Iowa, in 1987. He has worked in Red Oak, Grundy Center, and Nevada, Iowa. He has been in Washington for 23 years. Maxwell has also operated a farm in Henry County for 20 years.

Tony Maxwell will share his over 20 years of experience as the USDA NRCS District Conservationist in Washington County, Iowa, a county known for being a statewide leader in conservation practices throughout history. Maxwell will offer a field-scale perspective and share what he feels are key factors to the long-term, countywide successes they have achieved.

A large graphic celebrating the 75th anniversary of the Soil and Water Conservation Society. It features a background image of a green field under a sunset sky. The word "CONGRATULATIONS" is at the top in white, followed by "on" and a large "75 years!". The Soil and Water Conservation Society logo is on the left. Below the main text, a white box contains the text: "The Conservation Infrastructure initiative fosters continued innovation to expand conservation to improve water quality." At the bottom are logos for "The Conservation Infrastructure Initiative", "IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP", and "IOWA AGRICULTURE WATER ALLIANCE".

CONGRATULATIONS
on
75 years!

SOIL AND WATER CONSERVATION SOCIETY

The Conservation Infrastructure initiative fosters continued innovation to expand conservation to improve water quality.

The Conservation Infrastructure Initiative

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

IOWA AGRICULTURE WATER ALLIANCE

TUESDAY, JULY 28

Evening Social

4:30 PM – 5:30 PM CT

Join your fellow conference attendees in one of our many social rooms. These rooms offer time for networking and interaction among the learning and dialogue.

Room 1 Conservation Trivia

Moderator: Catherine DeLong, SWCS

Test your personal knowledge of conservation and find out how much your fellow colleagues know during this poll-based trivia hour! A nod to our conference sponsors and supporters in Iowa and beyond.

Room 2 Iowa's Outdoor Recreation Tour

Presenters: Steve Konrady, Iowa DNR; Tyler Stubbs, Iowa DNR

The Iowa Department of Natural Resources (DNR) manages over 375,000 acres open to public recreation, with the mission to conserve and enhance our natural resources in cooperation with Iowans and visitors to Iowa. From the trout streams in the rugged karst of the northeast, rolling hills with the feel of the endless prairie of Iowa's past in the south, to the stunningly unique Loess Hills of the west, Iowa has much variety to share. Join Steve Konrady of the Environmental Services Division (Iowa Chapter SWCS President Elect) and Tyler Stubbs of the Conservation and Recreation Division along with other featured guests to explore some of these recreational opportunities and see how the DNR leads Iowans in caring for our natural resources.

Room 3 Spotlight on an Artifact

Moderator: Joe Otto, SWCS

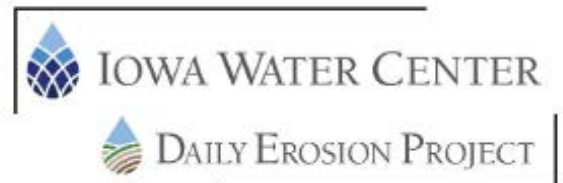
Join this session for a deep dive into SWCS's impressive collection of conservation archival documents and conservation mementoes, some formerly owned by Hugh Hammond Bennett. Visit the gallery portion of the online conference platform for a slideshow of these never-before-seen artifacts and more.

Room 4 Syngenta Sponsored Pritchard Panel Dialogue and Drinks (LIMIT 20 ATTENDEES)

Presenters: Paul Lasley, Iowa State University; Linda Prokopy, Purdue University; Roger Wolf, Iowa Soybean Association; Tony Maxwell, USDA NRCS

This will be a moderated session that allows attendees to further discuss diffusing innovations with this

morning's panelist. Grab your drinks and come early because this session is first come, first served, and the maximum participation is 20 to allow for robust dialogue.




About the Daily Erosion Project 🔍

The Daily Erosion Project (DEP), an Iowa Water Center program, estimates soil erosion and water runoff occurring on hill slopes in Iowa and surrounding states.

Daily estimates of average hill slope soil loss (and water runoff) occurring for each watershed in Iowa are available on the DEP website at dailyerosion.org.

DEP can be used for watershed planning and targeted conservation for infield soil management practices.

Learn more about the IWC today at water.iastate.edu or join the IWC newsletter at water.iastate.edu/content/newsletter-opt 



Tuesday, July 28, 2020 <i>Central Time</i>				
9:00 AM - 10:45 AM	SWCS Conference Opening - <i>Clare Lindahl, Soil and Water Conservation Society</i> ; Keynote Sponsor - <i>Caydee Savinelli, Syngenta</i> ; Pritchard Keynote Panel: Diffusing Conservation Innovations - <i>Paul Lasley, Iowa State University; Linda Prokopy, Purdue University; Roger Wolf, Iowa Soybean Association; Tony Maxwell, USDA NRCS</i>			
10:45 AM - 11:00 AM	Morning Break			
11:00 AM - 12:30 PM	Symposia Sessions			
Conservation Innovation Grants Showcase	Conservation Innovation Grants Program Overview and Stakeholder Updates - <i>Leah Hermens, USDA NRCS</i> ; The Future of Iowa Conservation through Innovations in Agricultural Land Management Systems - <i>Scott Cagle, USDA NRCS</i>			
Back to the Future	Soil and Water Conservation: A Celebration of 75 Years - <i>Clark Gantzer, University of Missouri</i>			
Conservation Economics and Policy	Farms Under Threat: New Tools for Saving Farmland - <i>Ann Sorensen, American Farmland Trust</i>			
Conservation Models, Tools, and Technologies	Extending the Agricultural Conservation Planning Framework for NRCS: Evaluation and Adoption in Multiple States - <i>Mark Tomer, USDA ARS</i>			
The Producer and the Plot	Practical Farmers of Iowa's Cooperators' Program: Who Better to Investigate Cost-Effective, Best Management Practices Than the Farmers Asking the Questions? - <i>Stefan Gailans, Practical Farmers of Iowa</i>			
11:00 AM - 12:30 PM	Oral Presentations			
	11:00 AM	11:23AM	11:46 AM	12:09 PM
Adaptive Management of Conservation Efforts		Effects of Long-Term Tillage and Nitrogen Fertilizer Rates on Sorghum Yield, Nitrogen Uptake, and Utilization Efficiency - <i>Mosaed A. Majrashi, Kansas State University</i>	Growth, Yield, and Plant-Water Status of Cotton and Sorghum under Different Cover Crop and Tillage Systems - <i>Madhav Dhakal, USDA ARS</i>	Impact of 4R Management on Crop Production and Nitrate-Nitrogen Loss in Northwest Iowa - <i>Matthew Helmers, Iowa State University</i>
Conservation Models, Tools, and Technologies	Applying Computed Tomography Scanning to Study Soil Porosity for Water Conservation - <i>Nardeep Singh, South Dakota State University</i>	Modeling Ephemeral Gully Development under No-Till Managements - <i>Dalmo A.N. Vieira, USDA ARS</i>	Sensitivity of the Soil Vulnerability Index to Thin Topsoils above a Restrictive Layer - <i>Claire Baffant, USDA ARS</i>	Assessing Soil Vulnerability Index Performance with Respect to Rainfall Characteristics - <i>Quang A. Phung, University of Missouri</i>
Edge-of-Field Practices and Monitoring (Track Sponsored by The Nature Conservancy)	Building Capacity to Reduce Nutrient Losses from Tile-Drained Lands - <i>Adrienne L. Marino, The Nature Conservancy</i>	Educational Opportunities Associated with Edge-of-Field Monitoring and Discovery Farms - <i>Mike Daniels, University of Arkansas</i>	Engaging the Private Sector in Edge-of-Field Practice Implementation by Recognizing Barriers and Identifying Solutions - <i>Keegan J. Kult, Ag Drainage Management Coalition</i>	Edge-of-Field Roadmap: A Collaborative Process to Accelerate the Adoption of Edge-of-Field Practices - <i>Shamitha Keerthi, The Nature Conservancy</i>
Soil Health Resources, Indicators, Assessment, and Management	Circular Grass Buffer Strips for Restoring Soil Health in Great Plains Agriculture - <i>Rajan Ghimire, New Mexico State University</i>	Crude Glycerin as a "Liquid Cover Crop" to Reduce Nitrogen Loss and Improve Crop Yield - <i>Stephen Potter, Iowa State University</i>	Selecting for Microbial Life Strategies in Agricultural Soils under Soil Health Promoting Practices - <i>Elizabeth L. Rieke, Soil Health Institute</i>	Understanding Soil Health Indicators and Nitrogen Dynamics in Southeastern United States Grazing Systems - <i>Dorcas H. Franklin, University of Georgia</i>
Water Resource Assessment and Management	Developing an Optimized Decision Support Framework for Sustainable Field-Scale Assessment Using Hydro-Conditioned Watershed Modeling Tools - <i>Srinivas Rallapalli, University of Minnesota</i>	Prioritizing Resources to Meet Water Quality Goals - <i>Heidi M. Peterson, Sand County Foundation</i>	Sediment Microbiome Structure and Nutrient Removal during Development of a Constructed Wetland - <i>Mahsa Izadmehr, University of Illinois at Chicago</i>	

12:30 PM - 1:00 PM	Lunch Break			
1:00 PM - 2:30 PM	Symposia Sessions			
Conservation Innovation Grants Showcase	Innovative Ways to Improve Pollinator Habitat - <i>Leah Hermens, USDA NRCS</i>			
Back to the Future	Expanding Horizons: Where Climate Change Meets Innovative Conservation - <i>Hans Schmitz, Purdue Extension</i>			
Edge-of-Field Practices and Monitoring (Track Sponsored by The Nature Conservancy)	Transforming Drainage in Iowa: Implementation and Monitoring of Edge-of-Field Practices - <i>Matthew Helmers, Iowa State University</i>			
Outreach, Education, and Community Engagement	Cumulative Impact of NACD Technical Assistance Grants - <i>Meg Leader, National Association of Conservation Districts</i>			
Water Resource Assessment and Management	An Iowa View of Watershed Collaboration: Opportunities and Challenges - <i>Allen Bonini, Iowa Department of Natural Resources</i>			
1:00 PM - 2:30 PM	Oral Presentations			
	1:00 PM	1:23 PM	1:46 PM	2:09 PM
Applied Data in Agriculture	A Tool to Optimize the Design of Drainage Systems for Crop Production and Environmental Protection - <i>Ehsan Ghane, Michigan State University</i>	Can Sampling the Wetland Fringe Soil Profile Show the Multi-Element Composition at Depth of Prairie Potholes? - <i>Carrie Werkmeister, USDA NRCS</i>	The Effect of Land Management on Evapotranspiration and Carbon Flux in a Long-Term Agroecosystem Research Site in Texas - <i>Dorothy Menefee, USDA ARS</i>	Use of Spectroradiometry and Gap Filling to Monitor and “Reconstruct” Soil Quality Parameters in a Long-Term Paired Watershed Experiment - <i>Ann Marie Fortuna, USDA ARS</i>
Conservation Economics and Policy	Economic Assessment of Adoption of Soil Health Management Systems - <i>John Shanahan, Soil Health Institute</i>	Comparative Costs and Returns Analysis for Soil Health Management Systems - <i>Archie Flanders, Soil Health Institute</i>	How are Iowa Farmers’ Pocketbooks Faring when Adding Cover Crops to a Corn and Soybean System? - <i>Rebecca M. Clay, Practical Farmers of Iowa</i>	
Conservation in Organic, Specialty, Small-Scale, or Urban Agriculture	Development of Eco-Friendly Mulching Boards and Their Role in Conservation Agriculture - <i>Sian Onwona-Agyeman, Tokyo University of Agriculture and Technology</i>	Nature Farming: New Trends and Challenges of Organic No-till Systems in Japan - <i>Masakazu Komatsuzaki, Ibaraki University</i>	Reduced Nitrate Leaching under Kernza, a New Perennial Grain Crop - <i>Evelyn C. Reilly, University of Minnesota</i>	Soil, Water, and Tree Conservation on Atlanta's First Sustainable SITES Project - <i>David Dechant, Arborguard (A Davey Tree Expert Company)</i>
Social Sciences Informing Conservation	Assessing Conservation Outreach: A Social Indicators Evaluation Approach - <i>Adam P. Reimer, National Wildlife Federation</i>	Persistence: What Motivates Farmers to Use Cover Crops Long-Term? - <i>Linda Prokopy, Purdue University</i>	Understanding Climate Adaptation Decisions in the Eastern Corn Belt - <i>Robyn Wilson, Ohio State</i>	Using Survey Results to Enhance Outreach and Increase Implementation of Residential Stormwater Best Management Practices - <i>Breanna Marmur, Iowa State University</i>
Soil Health Resources, Indicators, Assessment, and Management		Got WORMS (Working on Regenerative Management Systems): A Web-Based Soil Health Application for Field Data Collection - <i>Amy Seiger, Oklahoma Conservation Commission</i>	The Soil Health Institute’s Framework to Quantify the Functions of Soil - <i>Shannon B. Cappellazzi, Soil Health Institute</i>	Using Dynamic Soil Properties to Set Soil Health Indicator Reference Conditions for Soil Survey - <i>Skye Wills, USDA NRCS</i>

2:30 PM - 3:00 PM	Afternoon Break			
3:00 PM - 4:30 PM	Symposia Sessions			
Conservation Innovation Grants Showcase	Innovative Tools for Planning and Management Practices - <i>Havala Schumacher, USDA NRCs</i>			
Back to the Future	Big Solar: Industrial Blight or Next-Gen Conservation? - <i>Rob Davis, Fresh Energy</i>			
Conservation Models, Tools, and Technologies	USDA Climate Hubs: Advancing Conservation under a Changing Climate - <i>Dennis Todey, USDA ARS</i>			
Soil Health Resources, Indicators, Assessment, and Management	Interseeding Cover Crops in Corn to Address Weather Changes, Increase Efficiency, and Communicate with Nonoperating Land Owners - <i>Daniel P. Zinkand, DZC, LLC</i>			
Water Resource Assessment and Management	Partnerships and Progress: An Update on the Hypoxia Task Force - <i>Max R. Pottboff, US EPA</i>			
3:00 PM - 4:30 PM	Oral Presentations			
	3:00 PM	3:23 PM	3:46 PM	4:09 PM
Adaptive Management of Conservation Efforts	National Efforts to Align Soil Test Phosphorus Recommendations - <i>Deanna Osmond, North Carolina State University</i>	Potential for Mineralization of Soil Organic Matter to Explain Nitrogen Loss and Improve Nitrogen Recommendations - <i>Alyssa M. Gunderson, University of Wisconsin Stevens Point</i>	Soil Physical Properties and Organic Carbon in Response to Integrated Crop-Livestock System in South Dakota - <i>Jashanjeet Kaur Dhalwal, South Dakota State University</i>	The Effect of Green Fertilizers on the Ecological Structure of Soil Invertebrate Communities in Soils of Southwestern Colombia - <i>Felipe Benarides, Universidad de Nariño</i>
Edge-of-Field Practices and Monitoring (Track Sponsored by The Nature Conservancy)	Current Research in Improving Phosphorus Removal Structures - <i>Chad Penn, USDA ARS</i>	Do Prairie Strips Affect Nearby Soil and Crop Health? - <i>Cole Dutter, Iowa State University</i>	Evaluating Conservation Practice Efficiencies: Edge-of-Field Monitoring Results for the Great Lakes Restoration Initiative Priority Watersheds Program - <i>Matt Komiskey, US Geological Survey</i>	Evaluating Sediment and Nutrient Apportionment to Improve Conservation Efforts in Headwater Streams of the Maumee River Watershed - <i>Edward G. Dobrowolski, US Geological Survey</i>
Outreach, Education, and Community Engagement	Adoption of Conservation Farming by an Illinois Forest Preserve District - <i>Michelle Blackburn, Forest Preserve District of Will County</i>	Beyond Borders: Upstream Watershed Investment for Downstream Water Quality Benefits - <i>Mary Beth Stevenson and Mike Kuntz, City of Cedar Rapids</i>	Educating and Engaging Decision-Makers through Green Infrastructure Charrettes - <i>David Yocca, Green Infrastructure Foundation</i>	Going Far Together: A Collaborative and Systems Approach to Achieving Nutrient Loss Reductions - <i>Jean Brokish and April Opatik, American Farmland Trust</i>
Social Sciences Informing Conservation	Complying with Conservation Compliance? An Assessment of Recent Evidence in the United States Corn Belt - <i>Austin Holland, University of Iowa</i>	The Key to Conservation on Rented Lands: Nonoperating Landowner Survey Results - <i>Ashley Brucker, American Farmland Trust</i>	Understanding the Role of Information Networks in Promoting Conservation Behavior on Rented Farmland - <i>Pranay Ranjan, Purdue University</i>	
Water Resource Assessment and Management		Lake Water Quality Resilience to Extreme Flooding Events in an Agricultural Watershed - <i>Richard Lizotte, USDA ARS</i>	Protecting Source Water with a Payment for Ecosystem Services Fund - <i>Brian Brandt, American Farmland Trust</i>	Nutrient and Sediment Loading from Small Subwatersheds in the Western Lake Erie Basin - <i>Laura Johnson, Heidelberg University</i>
4:30 PM - 5:30 PM Evening Social	<u>Room 1</u> Conservation Trivia - <i>Catherine DeLong, Soil and Water Conservation Society</i>	<u>Room 2</u> Iowa's Outdoor Recreation Tour - <i>Steve Konrady, Iowa DNR</i>	<u>Room 3</u> Spotlight on an Artifact - <i>Joe Otto, Soil and Water Conservation Society</i>	<u>Room 4 (LIMIT 20 ATTENDEES)</u> Syngenta Sponsored Pritchard Panel Dialogue and Drinks

TUESDAY, JULY 28

SYMPOSIA SESSIONS

Conservation Innovation Grants Showcase

11:00 AM – 4:30 PM CT

The USDA Natural Resources Conservation Service (NRCS), in conjunction with SWCS, will host the Conservation Innovation Grants (CIG) Showcase at the virtual SWCS International Annual Conference. Since 2004, CIG has supported the development of innovative natural resource conservation approaches and technologies on working lands.

This year's showcase includes an overview of the CIG program and three themed panels. The first panel highlights the future of Iowa conservation through innovations in agricultural land management systems. The second panel explores CIG projects that address pollinator conservation and innovative ways to improve pollinator habitat. The final panel includes presentations from CIG grantees demonstrating innovative tools for planning and management practices.

This showcase runs from 11:00 AM to 4:30 PM CT on Tuesday, July 28. Following the showcase, CIG project posters may be viewed in the poster presentation gallery for the duration of the event.

Conservation Innovation Grants Program Overview and Stakeholder Updates; The Future of Iowa Conservation through Innovations in Agricultural Land Management Systems

11:00 AM – 12:30 PM CT

Moderators: Leah Hermens, USDA NRCS; Scott Cagle, USDA NRCS

Presentation 1: Conservation Innovation Grants Program Overview and Stakeholder Updates – *T.J. Wilson and Leah Hermens, USDA NRCS*

Presentation 2: Insect-Ready Farms: Incorporating Habitat for Pollinators and Beneficial Insects on Iowa Farms – *Sarah Nizzi, Xerces Society*

Presentation 3: Field Testing and Demonstration of a Modified Woodchip Bioreactor – *Natasha Hoover, and Lindsey Hartfiel, Iowa State University, Department of Agricultural and Biosystems Engineering*

Innovative Ways to Improve Pollinator Habitat

1:00 PM – 2:30 PM CT

Moderator: Leah Hermens, USDA NRCS

Presentation 1: Enhancing Monarch Butterfly Conservation in Iowa – *Steven Bradbury, Iowa State University*

Presentation 2: The Native Agriculture to InVigorate Ecosystems (NATIVE) Project – *Jon Young, Audubon Arkansas*

Presentation 3: Bee Better Certified – *Cameron Newell, Xerces Society*

Innovative Tools for Planning and Management Practices

3:00 PM – 4:30 PM CT

Moderator: Havala Schumacher, USDA NRCS

Presentation 1: Improving Nutrient Management Plan Implementation by Integrating Pollution and General Liability Insurance-Based Incentives – *Kevin Erb, University of Wisconsin-Madison*

Presentation 2: Forage Forecasting/Nutritional Analytics: Decision-Support for Rangeland/Grazingland Ecosystems – *Jay Angerer, Texas A&M*

Presentation 3: Right Nutrient Rate and Delivery Method for Optimal Growth and Conservation Practices in Petunia (*Petunia Hybrida*) Production – *Dharma Pitchay, Tennessee State University*

Soil and Water Conservation: A Celebration of 75 Years

11:00 AM – 12:30 PM CT

Moderator: Clark Gantzer, University of Missouri

Over 400 years, America has been transformed from wilderness into a land of great agricultural production. Americans have not always been careful of the resources responsible for this great productivity. Over 75 years ago, Hugh Hammond Bennett, the "father of soil conservation," began discussions about the need for a society to support soil conservation. This society was established as the Soil Conservation Society in 1945 and has become the Soil and Water Conservation Society (SWCS). Bennett stated, "Economic, social,

TUESDAY, JULY 28

cultural, public health, national defense—conservation of natural resources is an objective on which all should agree." The SWCS has worked for the past 75 years to sustain the land and natural resources that support life.

This symposium will celebrate the progress of the Society by hosting presentations on the past, present, and future of soil erosion and conservation including details on soil, water, management, technology, social science, economics, food security, land use, international issues, and the impact of the Society including future efforts.

This symposium will be of interest to scientists, conservation practitioners, and policy makers. Presenters will be invited from the group of authors publishing chapters within the SWCS's 75th anniversary collection book.

Presentation 1: Conservation to Sequester Carbon – *Rattan Lal, The Ohio State University*

Presentation 2: Ecosystem Services Markets Conceived and Designed for US Agriculture – *Debra Ann Reed, Ecosystem Services Market Consortium*

Presentation 3: Protecting Ecosystems by Engaging Farmers in Water Quality Trading – *Jessica Fox, Electric Power Research Institute*

Presentation 4: Soil Biology and Conservation – *Kristen S. Veum, USDA ARS*

Presentation 5: Building Resilient Cropping Systems with Soil Health Management – *Barry Fisher, USDA NRCS*

Presentation 6: Climate Change, Greenhouse Gas Emissions, and Carbon Sequestration: Challenges and Solutions for Natural Resources Conservation through Time – *Jean L. Steiner, Kansas State University*

Presentation 7: Modeling Soil and Water Conservation – *Dennis C. Flanagan, USDA ARS*

Presentation 8: Changing the Cover Crop Message for Increased Adoption – *Rebecca Clay, Practical Farmers of Iowa*

Presentation 9: A History of Soil Conservation Economics – *Steve Wallander, USDA ERS*

Farms Under Threat: New Tools for Saving Farmland
11:00 AM – 12:30 PM CT

Moderator: Ann Sorensen, American Farmland Trust

Presenters: Mitchell C. Hunter, American Farmland

Trust; Cris Coffin, American Farmland Trust; Ryan Murphy, American Farmland Trust

Farms Under Threat is a groundbreaking research initiative undertaken by American Farmland Trust in collaboration with Conservation Science Partners and NRCS. Using advanced geospatial and remote sensing techniques, we have done the most comprehensive assessment ever of the status and quality of US farm and ranch land, and the threats posed by development. Having recently incorporated the latest national datasets, our interactive mapping tool (www.farmland.org/farmsunderthreat) enables anyone to zoom into their state, county, and even subcounty area. This interactive session will help you become an expert user of this data so you can be an even more effective conservationist.

Our analysis shows that over 11 million acres were developed or compromised from 2001 to 2016, an area the size of Massachusetts and New Hampshire combined. We have also quantified the quality of all



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TUESDAY, JULY 28

agricultural land across the United States using our novel index of productivity, diversity, and resiliency (PVR), allowing more nuanced identification of the land that is most critical to preserve for the future. Finally, our new analysis of each state's suite of farmland protection policies shows which states are leading, which states have the most urgent need to act, and how each state can improve. Together, this information provides a roadmap for saving the land that sustains us.

In this symposium, we will provide an overview of our methods and findings, but we will focus on building familiarity with the interactive website and related resources. We will brainstorm ideas for using Farms Under Threat to advance working lands protection, work through case studies that are relevant to audience members, and troubleshoot any questions that arise. We will close with a discussion of how to approach the next phase of our analysis: projecting development and climate change impacts to 2040.

Extending the Agricultural Conservation Planning Framework for NRCS: Evaluation and Adoption in Multiple States

11:00 AM – 12:30 PM CT

Moderator: Mark Tomer, USDA ARS

The Agricultural Conservation Planning Framework (ACPF) is a flexible, user-friendly, and widely applicable conservation planning tool developed by the USDA Agricultural Research Service in partnership with the Natural Resources Conservation Service (NRCS). The ACPF uses geospatial data and an ArcGIS-based toolbox to support watershed planning by facilitating targeted conservation and promoting stakeholder engagement in small agricultural watersheds. The ACPF uses a nonprescriptive approach with high-resolution soils, land use history, and terrain data to identify site-specific conservation opportunities that address both on-farm and community-wide resource concerns. The ACPF helps conservation planners work with producers and communities to identify conservation opportunities

Growing a Sustainable Future

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TUESDAY, JULY 28

and informs the development of effective watershed planning. This session provides an overview of current efforts to adapt the ACPF for use by NRCS and extend its regional scope. The first three presentations will (1) share ACPF results for targeted watersheds and discuss technical needs for adapting the ACPF toolbox, (2) examine the opportunities and challenges of using the ACPF and explore the capacity of NRCS to integrate the ACPF into their conservation planning toolkit, and (3) provide updates on ACPF training resources to increase ease of use for conservation planners, fields staff, and partners, and enable future extension of the ACPF by the next generation of tool developers. The symposium will conclude by sharing recent efforts to expand the ACPF into Pennsylvania, Vermont, and North Carolina.

Presentation 1: Preliminary ACPF Toolbox Results for Targeted Watersheds and Considerations for Adapting Tools in Various Landscapes – *Jessica A. Nelson, Iowa State University*

Presentation 2: Opportunities and Challenges of Integrating ACPF into NRCS's Conservation Planning Toolkit – *Emily Usher, Purdue University*

Presentation 3: Expanding Access to ACPF through Training Development and Delivery – *Ann Lewandowski, University of Minnesota Water Resource Center and Rebecca Power, University of Wisconsin-Extension*

Presentation 4: Evaluating ACPF for Use in Watershed Assessment in the Eastern United States – *Jon Duncan, Penn State University*

Practical Farmers of Iowa's Cooperators' Program: Who Better to Investigate Cost-Effective, Best Management Practices Than the Farmers Asking the Questions?

11:00 AM – 12:30 PM CT

Moderator: Stefan Gailans, Practical Farmers of Iowa

Valid and reliable farmer-generated information is a cornerstone of Practical Farmers of Iowa (PFI). Since 1987, over 240 farmers in PFI's Cooperators' Program have conducted over 1,400 research trials to answer their most challenging farming questions. PFI farmers don't have all the answers, but they do have a tool for working towards those answers. The farmers are responsible for setting project objectives, collecting data, and sharing results with other farmers.

The on-farm experiments employ the basic principles of experimental design, which allows for statistical analysis of the results—randomized and replicated treatment strips run the length of the field and accommodate commercial-sized farm equipment. By designing and conducting their own experiments, PFI farmers have learned to make critical observations and scientifically informed improvements to their farming practices. Ultimately, the experience arms farmers with knowledge and confidence to help them be more profitable and be better environmental stewards. In this symposium, PFI staff and farmers will weave together a history of PFI's farmer-led approach with results of on-farm experiments on nutrient management, cover crops, variety selection, and more. Attendees will learn the importance of a farmer-led approach for lending credibility and relevance to on-farm research.

Practical Farmers of Iowa is a farmer-led nonprofit organization that works to equip farmers to build resilient farms and communities. With over 4,000 members, PFI farmers represent a diversity of farming systems including conventional, organic, integrated crop-livestock, grass-based, and everything in between. PFI farmers across the state conduct their own research and host field days to share information with others towards a vision of healthy soil, healthy food, clean air, clean water, resilient farms, and vibrant communities. PFI's work and farmers have been featured on PBS NewsHour and in The New York Times, Yes! Magazine, Civil Eats, and Mother Jones.

Presentation 1: Why Farmer-Led On-Farm Research? – *Stefan Gailans, Practical Farmers of Iowa*

Presentation 2: Answer Your Own Questions and Find Solutions Using Farmer Curiosity and Scientific Structure – *Nathan Anderson, Bobolink Prairie Farm, Aurelia, Iowa*

Presentation 3: On-Farm Research at SunDog Farms Leads to Better Observations – *Carmen Black, SunDog Farms, Solon, Iowa*

Expanding Horizons: Where Climate Change Meets Innovative Conservation

1:00 PM – 2:30 PM CT

Moderator: Hans Schmitz, Purdue Extension

Presenters: Laura Edwards, South Dakota State University; Dennis Todey, USDA ARS; Peter Tomlinson,

TUESDAY, JULY 28

Kansas State University; Aaron Wilson, The Ohio State University; Monica Jean, Michigan State University; Tyler Williams, Bayer; Senator Mike Braun; Senator Debbie Stabenow

Modern agriculture is under scrutiny by consumers who wish to purchase products perceived as sustainably produced without chemical or genetic alteration. Some part of this perception includes lowering the carbon footprint of food. Science is conclusive that climate change exists, and a majority of that change is man-made. Agricultural practices constitute a portion of gaseous emissions that influence climate change. However, conservation efforts in agriculture generally align with climate change adaptation and mitigation principles for agriculture.

In this symposium, organizers have contacted Senators Stabenow (D-MI) and Braun (R-IN) for a discussion of the Growing Climate Solutions Act, legislation that would increase access to carbon credit markets for farmers. Representatives from Land O' Lakes and Bayer have also been contacted to provide bill-sponsoring industry perspective on conservation practices that meet the goal of sequestering carbon in soils and increasing organic matter supplies for a climate change resilient American agricultural landscape. Specific practices that compliment both conservation of resources and climate change adaptation will be highlighted, along with the need for technical service providers educated in the value of those practices. The concept of auditing industries and sites for their climate change resilience will also be discussed.

Transforming Drainage in Iowa: Implementation and Monitoring of Edge-of-Field Practices

1:00 PM – 2:30 PM CT

Moderator: Matthew Helmers, Iowa State University

Subsurface drainage has dramatically increased agricultural productivity in Iowa and throughout much of the Upper Midwest United States. However, a side effect of these drains is the transport of nitrate-nitrogen lost from the crop root zone to downstream waters. Edge-of-field nitrate reduction practices have been developed to intercept this drainage water and remove or reuse the nitrate. Activities are underway in Iowa to dramatically increase the implementation of these edge-of-field practices and monitor their performance. A new collaborative project among the Iowa Department of Agriculture and Land Stewardship,

Iowa Soybean Association, and Iowa State University focuses specifically on saturated buffers, bioreactors, wetlands, and drainage water recycling. This symposium includes presentations with the latest information on the scientific basis, performance monitoring, and implementation strategies for these practices. While focused on Iowa, this session has broad applicability across the Corn Belt and highlights how a state is actively working to implement these edge-of-field practices.

Presentation 1: Implementation and Overview – *Matt Lechtenberg and Shane Wulf, Iowa Department of Agriculture and Land Stewardship*

Presentation 2: Saturated Buffers – *Tom Isenhardt, Iowa State University*

Presentation 3: Bioreactors – *Chris Hay, Iowa Soybean Association*

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TUESDAY, JULY 28

Presentation 4: Wetlands – *Bill Crumpton, Iowa State University*

Presentation 5: Drainage Water Recycling – *Matt Helmers, Iowa State University*

Cumulative Impact of NACD Technical Assistance Grants

1:00 PM – 2:30 PM CT

Moderator: Meg Leader, NACD

In 2017, the National Association of Conservation Districts (NACD) entered into an agreement with USDA Natural Resources Conservation Service (NRCS), which directed funding to the local level to hire district employees to assist landowners and producers to expand conservation efforts. The first agreement allowed NACD to allocate \$9 million in technical assistance funding to 157 grantees in 2018. This funding allowed the recipient districts/tribes/agencies/associations/RC&D Councils to add or expand nearly 240 “boots on the ground” positions.

The first agreement was followed with a second a year later awarding an additional \$9.9 million spread across a wider set of grantees. A third agreement is in the process of being implemented this year.

Within each state/territory the conservation leadership had the requirement and flexibility to direct the funds to their highest priority workloads or projects. With this ability to focus the work on where it would have highest impact, the resulting grants have been tailored to increase their impact and lay the groundwork that will be felt for many years.

This symposium will offer a look into both the cumulative effect of this added human capital into our conservation delivery system and the lessons learned. Participants will also hear from three of the grantees about not only what they are achieving within the stated goals of the program, but also what other unforeseen impacts they are experiencing because of the added staff.

Presentation 1: National Overview of Technical Assistance Grants – *Meg Leader, NACD*



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TUESDAY, JULY 28

Presentation 2: The Benefits of Connecting One on One and Having "Been There and Done That" – *Greg Lake, Allen County Soil and Water Conservation District; Tim Bomba, USDA NRCS, Allen County; Mike Werling, Allen County Soil and Water Conservation District*

Presentation 3: Kansas Conservation Agronomist Partnership – *Keri Harris, Franklin County Conservation District; Kaitlin Gibbons, Franklin County Conservation District*

Presentation 4: Tyonek Tribal Conservation District NACD Project: Innovative Approaches to Stewardship and Partnership – *Christy Cincotta, Tyonek Tribal Conservation District; Tonya Kaloa, Tyonek Tribal Conservation District*

Presentation 5: Vermont Program Assistants: The Grease That Keeps the Gears Turning – *Vicky Drew, USDA NRCS Vermont State Conservationist; Jill Arace, Vermont Association of Conservation Districts*

An Iowa View of Watershed Collaboration: Opportunities and Challenges

1:00 PM – 2:30 PM CT

Moderator: Allen Bonini, Iowa Department of Natural Resources

Presenters: Mary Beth Stevenson, City of Cedar Rapids; John Swanson, Polk County; Cara Morgan, East and West Nishnabotna Watershed Management Authorities

In 2010, Iowa lawmakers passed legislation to authorize the creation of Watershed Management Authorities (WMA), a mechanism for cities, counties, Soil and Water Conservation Districts (SWCDs) and stakeholders to cooperatively engage in watershed planning and management.

WMAs have formed across Iowa for a variety of reasons, including water quality improvement, flood reduction, natural resource protection and enhancement, and fostering upstream and downstream collaborations. The WMAs leverage resources such as funding and technical expertise to work towards achieving a shared watershed vision. In the last decade 26 WMAs have formed, covering nearly 40% of the state. All the WMAs differ in funding source, participation level, and staffing, and have unique local goals and challenges. The WMAs that have been most successful have received financial support, have

staff, and have established strong relationships with government and nongovernmental partners.

Iowa Department of Natural Resources Watershed Improvement Supervisor Allen Bonini will moderate a panel of WMA project coordinators and water resource professionals to discuss topics such as funding sources and formulas, policy implementation and recommendations, the importance of collaboration and partnerships, outreach and education, and long-term sustainability to address Iowa's water resource challenges that lie ahead. Participants will have an opportunity to ask questions and engage in discussion with the panelists to explore opportunities that exist for adapting similar strategies in other states and share lessons learned.

Big Solar: Industrial Blight or Next-Gen Conservation?

3:00 PM – 4:30 PM CT

Moderator: Rob Davis, Fresh Energy

Presenters: Peter Berthelsen, Bee and Butterfly Habitat Fun; Heidi Hartmann, Argonne National Laboratory; Elysa Hammond, Clif Bar

Since 2013 the Midwest has gone from just a few acres to several thousand acres of solar farms. Eight states have adopted innovative policies that establish minimum standards for certain kinds of ground cover on the projects. Can the land in and around solar farms enrich the soil, improve the water, and provide suitable habitat for pollinators? As this new land use emerges, are there tradeoffs in a clean energy future? A panel including energy, policy, and conservation experts will explore these questions and share their experiences.

USDA Climate Hubs: Advancing Conservation under a Changing Climate

3:00 PM – 4:30 PM CT

Moderator: Dennis Todey, USDA ARS

Presenters: Emile Elias, USDA ARS; Dannele Peck, USDA ARS; Cait Rottler, USDA ARS; Curt Dell, USDA ARS

This symposium will address the individual and combined efforts of the USDA Climate Hubs in developing and delivering conservation technologies and tools to improve producer decision-making across various landscapes. These include such efforts as Grasscast, Dust Mitigation Handbook, Ag Outlooks,

TUESDAY, JULY 28

and other technologies. They will be discussed in the context of changing climate conditions and needs to address conservation and improve decision-making amidst changing precipitation, temperature and other climate changes. This symposium will discuss the development of these products, their impact, and future plans including discussions and partnering efforts in future development and improved connections.

This 90-minute session will hold a series of presentations followed by audience discussion and interaction on the tools and future conservation practice partnerships and plans.

Interseeding Cover Crops in Corn to Address Weather Changes, Increase Efficiency, and Communicate with Nonoperating Land Owners

3:00 PM – 4:30 PM CT

Moderator: Daniel P. Zinkand, DZC, LLC

Presenters: Dave Legvold, Minnesota Farmer, Conservationist, Educator; Michael H. Ludwig, Farmer, Seed Dealer, and Rice County (Minnesota) Soil and Water Conservation District Board Member; TJ Kartes,

Cover Crop and Forage Sales Agronomist, Saddle Butte Ag, Certified Crop Adviser (CCA), and Blooming Prairie, Minnesota, Farmer

Wet weather in recent falls has delayed and prolonged both the harvest of corn and soybeans as well as the seeding of cover crops. Minnesota farmers Dave Legvold and Michael H. Ludwig have adjusted to this by seeding some of their cover crops before harvest. This includes seeding while side dressing corn, as well as aerial and high clearance seeding. Seeding into V2-V6 corn saves a trip versus waiting until harvest. Preharvest seeding also opens up many cover crop species choices as compared to the de facto harvest "choice" of winter rye.

Successfully establishing cover crops seeded into V2-V6 corn starts by assessing herbicide programs because residual products can inhibit cover crop germination and/or establishment. As a cover crop and forage agronomist working in Minnesota, Iowa, South Dakota, and other states, TJ Kartes helps growers and landowners select herbicides that control weeds in corn without hurting cover crops.

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Interseeding cover crops into V2-V6 corn relies on cool-season, shade-tolerant cover crops that germinate and then go dormant until corn is harvested. Since farmers and agronomists from Quebec, Canada, shared their experience with SWCS at its 2012 Cover Crops Conference in Iowa, the practice of interseeding into V2-V6 corn has grown in popularity in the United States.

Legvold, Ludwig, and Kartes all have practical experience as farmers who have also worked with soil and water conservation districts, USDA NRCS, conservation and environmental organizations, and with landowners (NOLOs).

Partnerships and Progress: An Update on the Hypoxia Task Force

3:00 PM – 4:30 PM CT

Moderator: Max R. Potthoff, US EPA

Presenters: Katie Flahive, US EPA; Beth Baker, Mississippi State University; Ellen Gilinsky, River Network and Ellen Gilinsky LLC; Matthew Lechtenberg, Iowa Department of Agriculture and Land Stewardship

The Mississippi River/Gulf of Mexico Hypoxia Task Force (HTF) is a partnership of 5 federal agencies, 12 states, and the National Tribal Water Council, who work together collaboratively and voluntarily to work toward the goals of the task force. The HTF formed and adopted their long-term, large-scale challenge of reducing nutrient loss in the Mississippi/Atchafalaya River Basin (MARB) in order to reduce the size of the hypoxic zone in the northern Gulf of Mexico. The goal of the HTF is to reduce the five-year average areal extent of the hypoxic zone in the Gulf of Mexico to less than 5,000 square kilometers by 2035, with an interim target for reducing total nitrogen and total phosphorus loads by 20% by the year 2025.

In the spirit of SWCS's 75th anniversary, the HTF is excited to share the progress and partnerships that we've developed to work toward reaching our interim goal of 20% reduction in nitrogen and phosphorus delivered to the gulf by 2025. The HTF is an example of how to build partnerships across large river basins and among and within states. The collaboration between states, federal agencies, tribes, and partners has driven progress on several efforts, and the HTF is focused on reporting on basin-wide metrics to use to quantify progress toward the goal. The latest ideas, technologies, and practices will be necessary to achieve our goal by

scaling up implementation throughout small watersheds across the Mississippi River Basin. However, no one technology or practice can alone achieve the goal because of the wide variety of factors that influence nutrient losses, thus effective partnerships among a diversity of stakeholders is key. The HTF and partners are committed to working together through a variety of relationships as well as tools, including measuring basin-wide nutrient reductions at multiple scales, including annual hypoxic zone measurement; water quality and river flow data; statistical and other trend analyses of the data; state, regional, and basin-wide nutrient loading models; nonpoint and point source biennial metrics; and ongoing work by states to quantify progress toward the goal.

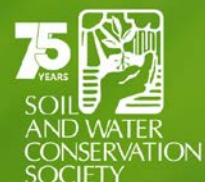
The HTF is a partnership of federal, state, and tribal agencies—managing nutrients across the basin to reduce gulf impacts requires collaborative engagement across all stakeholders. We're looking forward to showcasing how our partnerships can be leveraged alongside the latest technologies and metrics to help achieve our goal.

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WEDNESDAY, JULY 29

SCHEDULE AND EVENTS

SCHEDULE

Times listed below are Central Time.

8:00 AM – 9:00 AM	Morning Social
9:00 AM – 10:45 AM	Plenary Sessions
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 39-41)
12:30 PM – 1:00 PM	Lunch Break
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 39-41)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 39-41)

EVENTS

Morning Social

8:00 AM – 9:00 AM CT

Join your fellow conference attendees in one of our many social rooms. These rooms offer time for networking and interaction among the learning and dialogue.

Room 1 Coffee, Politics, and Water: Iowa Journalism and Informing the Public on Water Resources

Moderator: Hanna Bates, Iowa SWCS Chapter

Presenters: Art Cullen, *Storm Lake Times*; Donnelle Eller, *The Des Moines Register*; Erin Jordan, *The Gazette*

The State of Iowa has a storied past in respect to water quality impairments, flooding, and how these issues are managed at a state and local level. Past water resource management includes challenges, successes, and landmark decisions made by city councils, the legislature, and by the court system. Journalism plays a critical role in framing water and politics, and reporters often serve as the first line of communication to the general public. This panel will explore the diverse water resource issues from east to west in Iowa from a reporter's perspective and emphasize why journalism is important to soil and water conservation.

Room 2 Morning Yoga

Moderator: Heidi Ackerman, Iowa SWCS Chapter

Instructor: Lily Allen-Duenas

This 45-minute yoga class led by Lily Allen-Duenas will be a gentle flow that is perfect for beginners. The first half of the class will focus on yoga poses that are office-friendly and the second half will be a blend of seated and standing postures. Please wear flowy or stretchy clothes that you are comfortable moving in. Also, please do not consume food or drink coffee before this class. The body is happiest during yoga with an empty stomach!

Room 3 Headquarters Hop

Moderator: Joe Otto, SWCS

Take a virtual tour of SWCS's headquarters office in Ankeny, Iowa. Experience the statement architecture, meet the resident wildlife, and learn about the headquarters that members built. It will be like you are there!

Opening Remarks, Address from USDA NRCS, and A Dialogue on Diversity

9:00 AM – 10:45 AM CT

Moderator: Rex Martin, SWCS Chair

Presenters: Kurt Simon, USDA NRCS; Chief Matthew Lohr, USDA NRCS; Dale Threatt-Taylor, SWCS Incoming Chair; Ebony Webber, *Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS)*

The Wednesday general session will be opened by SWCS Chair Rex Martin. Following will be an address from USDA NRCS Chief Matthew Lohr with introductions by Kurt Simon, USDA NRCS Iowa State Conservationist. The general session will conclude with A Dialogue on Diversity with Dale Threatt-Taylor, Incoming Chair, SWCS; and Ebony Webber, MBA, COO, *Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS)*.



WEDNESDAY, JULY 29

Address from USDA NRCS



Kurt Simon, Iowa NRCS State Conservationist

Kurt Simon was named the 10th State Conservationist for Iowa in October of 2015. Simon has 36 years' experience in conservation with USDA. He holds degrees in wildlife management from Hocking

College and agronomy from Ohio State University.

Simon began his career as a Conservation District Technician in Ohio in 1980. He also served in West Virginia, Tennessee, California, South Carolina, and Alabama and at NRCS headquarters in Washington, DC. He has served as liaison to the National Wild Turkey Federation, The Nature Conservancy, and graduated from the NRCS Emerging Leadership Development Program through George Washington University in 2012.

As State Conservationist, Simon oversees NRCS programs in Iowa and works with partners to enhance conservation efforts across the state.



Chief Matthew Lohr, USDA NRCS

Matthew Lohr serves as the 16th Chief of USDA's Natural Resources Conservation Service (NRCS). As Chief, Matt provides leadership for NRCS and its mission to support America's farmers, ranchers, and forest landowners in their voluntary conservation efforts

through a network of more than 3,000 service centers in communities nationwide.

Matt was raised on a century family farm in Virginia's Shenandoah Valley. The fifth-generation farmer has spent his life working for the betterment of agriculture and stewardship on working lands.

Matt served as Virginia's Commissioner of Agriculture and Consumer Services from 2010 to 2013 and in the Virginia House of Delegates from 2006 to 2010. He has also worked as the Knowledge Center Director for Farm Credit of the Virginias, a customer-owned financial cooperative, as well as managed his own motivation speaking business, Lohr Leadership. Since 2017, he has farmed full-time on his family's operation, which includes poultry, beef cattle, row crops, and sweet corn.

Matt proudly served as both Virginia state FFA president and national FFA vice president before graduating from Virginia Tech in 1995. He and his wife Beth have six children.

A Dialogue on Diversity



Dale Threatt-Taylor



Ebony Webber

Dale Threatt-Taylor, Incoming Chair, Soil and Water Conservation Society (SWCS), and Ebony Webber, MBA, COO, Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS), will discuss the value, barriers, and opportunities of having diversity in our industry.

MANRRS promotes academic and professional advancement by empowering minorities in agriculture, natural resources, and related sciences. They are changing the face of agriculture, natural resources, and related sciences by supplying the industry with a diverse pool of talented leaders. They combine their passions for improving quality of life with new ideas and perspectives to enhance the world around us.

SWCS recognizes its mission to create a bright future for agriculture, the environment, and society can only be accomplished with the intentional inclusion of people of color. Diversity, equity, and inclusion reflect SWCS's core values, which include respect for people and cultures and the unification of people with diverse backgrounds, experiences, and ideas. SWCS seeks to listen and be part of creating institutions and systems that serve and value people equally.



WEDNESDAY, JULY 29



Dale Threatt-Taylor, Incoming Chair, Soil and Water Conservation Society

Dale Threatt-Taylor is the Executive Director of The Nature Conservancy South Carolina Chapter (TNC SC). She received a Bachelor of Science in

conservation from North Carolina State University and a master's of environmental management from Duke University in 2011. In 2012, she was selected as one of 30 agriculturalists in North Carolina identified to participate in the Agricultural Leadership Development Program at North Carolina State University.

Her career began as a soil conservationist with the USDA NRCS. She later joined the Wake Soil and Water Conservation District (SWCD) as a conservation technician and progressively moved into one of the natural resource conservationist positions. In 2008 she was selected as district director of Wake SWCD and Wake County Soil and Water Conservation Department. Her new role as Executive Director for TNC SC has provided the opportunity to build new relationships between soil conservationists and environmentalists across the nation.

Dale's vision for a successful Society includes active communication, professional board service, and productive membership. She wants everyone to understand that locally led conservation begins with an individual, and that all of our conservation work matters in protecting the land and water on which all life depends.



Ebony Webber, MBA, COO, Minorities in Agriculture, Natural Resources, and Related Sciences

Ebony is the Chief Operating Officer at Minorities in Agriculture,

Natural Resources and Related Sciences (MANRRS), where she provides support to the National Executive Committee and Advisory Board, and oversight and management of Strategic Partnerships. Hailing from a small, rural community, Ebony found interest in developing students and providing resources and

opportunities to increase access to academic- and career-related programs in underserved communities. By cultivating innovative programs and strategic partnerships, Ebony has been able to assist underrepresented students and professionals in recognizing and maximizing their full potential. Many of her responsibilities support her passion for advocating for inclusion and diversity and developing leaders, organizations, and communities to feed and clothe the next generation. Ebony holds an MBA from the University of Phoenix.



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Wednesday, July 29, 2020
Central Time

8:00 AM - 9:00 AM Morning Social	<u>Room 1</u> Coffee, Politics, and Water: Iowa Journalism and Informing the Public on Water Resources - <i>Hanna Bates, Iowa SWCS Chapter</i>	<u>Room 2</u> Morning Yoga - <i>Heidi Ackerman, Iowa SWCS Chapter</i>	<u>Room 3</u> Headquarters Hop - <i>Joe Otto, Soil and Water Conservation Society</i>	
9:00 AM - 10:45 AM	Opening Remarks - Rex Martin, <i>Soil and Water Conservation Society Chair</i> ; Address from USDA NRCS - Kurt Simon, <i>USDA NRCS</i> ; <i>Chief Matthew Lohr, USDA NRCS</i> ; A Dialogue on Diversity - Dale Threatt-Taylor, <i>Incoming Chair, Soil and Water Conservation Society</i> ; Ebony Webber, <i>Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS)</i>			
10:45 AM - 11:00 AM	Morning Break			
11:00 AM - 12:30 PM	Symposia Sessions			
Back to the Future	A Union Solider, Newspaper Cartoonist, and Two Soil Conservation Service Employees Walk into a Bar: Four Conservation Stories from American History - <i>Joseph Otto, Soil and Water Conservation Society</i>			
Conservation Models, Tools, and Technologies	Advancing Water Quality and Conservation through Innovative Public-Private-Nonprofit Partnerships - <i>Brad Jordahl Redlin and Danielle Isaacson, Minnesota Agricultural Water Quality Certification Program</i>			
Outreach, Education, and Community Engagement	Collaboration in Conservation: Women Farmland Owners-Tenant Relationships and Conservation Action - <i>Angie Carter, Michigan Technological University</i>			
The Producer and the Plot	Agricultural Conservation and Water Quality Research in the Iowa River's South Fork Watershed - <i>Mark Tomer, USDA ARS</i>			
Soil Health Resources, Indicators, Assessment, and Management	Accelerated Soil Health Training, Indicators, Assessment, and Management Systems - <i>Doug Peterson, USDA NRCS</i>			
11:00 AM - 12:30 PM	Oral Presentations			
	11:00 AM	11:23AM	11:46 AM	12:09 PM
Adaptive Management of Conservation Efforts	Comparing the Effects of Tillage and Edge-of-Field Conservation Practices on Runoff Water Quality in Mississippi Delta Cotton and Corn - <i>Amanda M. Nelson, USDA ARS</i>	Improving Water Quality in Agricultural Watersheds: Application from Tile-Drained Subwatersheds of the Mackinaw River, Illinois - <i>Maria Lemke, The Nature Conservancy</i>	Resilient Farming across Iowa Landscapes - <i>Emily Martin, Iowa Natural Heritage Foundation</i>	Vermont's Regional Conservation Partnership Program: Innovative Collaboration and Creative Opportunities - <i>Marli Rupe, Vermont Department of Environmental Conservation</i>
Conservation Economics and Policy	Application of Multistate Financial Data for Use with the USDA Agricultural Conservation Planning Framework - <i>Emma Bravard, Iowa State University</i>	Concepts for Managing Nutrients to Achieve Water Quality Goals - <i>Andrew Sharpley, University of Arkansas</i>	Fall Covers for Spring Savings-Crop Insurance Premium Discount Program - <i>Kris Reynolds, American Farmland Trust</i>	Using an Optimization Tool to Allocate Limited Conservation Funding: An Agricultural Conservation Planning Framework Application for the Big Creek Watershed - <i>Adriana M. Valcu-Lisman, Iowa State University</i>
Conservation Models, Tools, and Technologies		21st Century Technologies to Prepare for Flooding - <i>Ibrahim Demir, Iowa Flood Center</i>	Soil Quality Response to Tillage, Rotation, and Cover Crop Practices - <i>Jasdeep Singh, South Dakota State University</i>	Validation of a Quasi 3D Streamline Framework for the Simulation of Nonpoint Source Pollution in Large Agricultural Basins - <i>Thomas Harter, University California Davis</i>
Edge-of-Field Practices and Monitoring (Track Sponsored by The Nature Conservancy)	Changes in Nutrient Losses through Tile Drainage Systems after Planting Winter Rye Cover Crop - <i>Arun Bawa, South Dakota State University</i>	Edge-of-Field Winter Cover Crop Effectiveness within a Treatment Train of Agricultural Best Management Practices - <i>Laura Bender, University of Minnesota</i>	From Top to Bottom: Impact of Prairie Strips on Soil Movement in Cropped Fields - <i>Jessica A. Nelson, Iowa State University</i>	Unintended Consequences of a Best Management Practice: Cover Crop Evaluations from Edge-of-Field Monitoring for the Great Lakes Restoration Initiative Priority Watersheds Program - <i>Matt Komiskey, US Geological Survey</i>
Water Resource Assessment and Management	Contribution of Streambank Erosion to Total Phosphorus Loads in Iowa - <i>Keith Schilling, Iowa Geological Survey</i>	Environmental Partitioning of Trace Metals in the Vicinity of an Iron Foundry Slag Deposit at Carp Lake, Davenport, Iowa - <i>Anshu Singh, Western Illinois University</i>	Innovations and Lessons Learned from a Multiscaled, Multiobjective, Western Iowa Watershed Plan - <i>Adam D. Rupe, JEO Consulting Group</i>	

12:30 PM - 1:00 PM	Lunch Break			
1:00 PM - 2:30 PM	Symposia Sessions			
Applied Data in Agriculture	Interconnections between Extreme Weather, Flooding, Conservation, and Flood Control Policy - <i>Francisco Arriaga, University of Wisconsin-Madison</i>			
Adaptive Management of Conservation Efforts	Biochar from Forest to Farm - <i>Carlos Rodriguez-Franco, US Forest Service</i>			
Back to the Future	Innovation Using USDA NRCS Conservation Practice Standards - <i>Dana Ashford-Kornburger, USDA NRCS</i>			
Edge-of-Field Practices and Monitoring (Track Sponsored by The Nature Conservancy)	Nutrient Reduction Wetlands at Lake Panorama in Iowa - <i>Luke Monat, Shive-Hattery</i>			
Social Sciences Informing Conservation	Leadership for Midwestern Watersheds: Scaling Up Conservation through Networking - <i>Craig Ficene, Sand County Foundation</i>			
Water Resource Assessment and Management	Conservation Outcomes: The Influence of Legacy Nutrients and Lag Time - <i>Lisa Duriancik, USDA NRCS</i>			
1:00 PM - 2:30 PM	Oral Presentations			
	1:00 PM	1:23 PM	1:46 PM	2:09 PM
Conservation Models, Tools, and Technologies	A Tour of Vegetation Data in the National Soil Information System - <i>John Hammerly, USDA NRCS</i>	Classifying Riparian Corridors to Predict Environmental Benefits of Best Management Practices - <i>Hilary Pierce, Iowa Learning Farms</i>	Establishment of Volunteer Buffer Vegetation along Streams, Creeks, and Drainage Tributaries - <i>David J. Lang, Mississippi State University</i>	Perennial Cover: Strategies to Increase Conservation Efficiency - <i>Richard Cruse, Iowa State University</i>
Outreach, Education, and Community Engagement	A Toolkit for Conservation Leasing - <i>Olga Lyandres, Delta Institute</i>	Cultivating Soil Professionals: A Holistic Approach to Undergraduate Soils Education - <i>Katherine McCarville, Upper Iowa University</i>	Increasing Effectiveness of Online Conservation Training - <i>Kevin A. Erb, University of Wisconsin-Madison</i>	Using Photovoice to Inspire Conservation Conversations: Updates and Lessons from River Stories - <i>Women Landowners from Iowa's Des Moines and Raccoon River Watersheds</i>
Edge-of-Field Practices and Monitoring (Track Sponsored by The Nature Conservancy)	Boat Deployment of Real-Time Water Quality Sensors to Characterize Iowa Stream Nitrate - <i>Chris Jones, University of Iowa</i>	Evaluating and Improving Current Design Standards for Saturated Buffers - <i>Andrea R. McEachran, Iowa State University</i>	Implementation and Monitoring of Tile-Treatment Wetlands for Nutrient Loss Reduction in Illinois - <i>Jill Kostel, The Wetlands Initiative</i>	Incorporating Alternative Tile Intakes with Edge-of-Field Practices for Mutual Benefits - <i>Christopher Wilson, University of Tennessee</i>
Water Resource Assessment and Management		Correlation of Regional Watershed Land Usage to Nutrient Concentrations in Big Creek - <i>James M. Burke, University of Arkansas</i>	Direct Linkages between Soil Management and Eutrophication Potential of Iowa Streams - <i>Marshall McDaniel, Iowa State University</i>	Results from Two Years of Practice Adoption and Social Survey Data Analysis from a Regional Conservation Partnership Program Project in Illinois - <i>Michelle Perez, American Farmland Trust</i>

2:30 PM - 3:00 PM	Afternoon Break			
3:00 PM - 4:30 PM	Symposia Sessions			
Adaptive Management of Conservation Efforts	2018 Farm Bill and Source Water Protection: Partnerships and Collaborative Approaches to Protect Drinking Water Sources - <i>Sylvia Malm, Source Water Protection Collaborative Partnerships</i>			
Conservation Models, Tools, and Technologies	Seeding Change by Saving Tomorrow's Agricultural Resources (STAR): An Overview of the Development, Implementation, and Expansion of the STAR Program - <i>Emily Bruner, American Farmland Trust</i>			
Conservation Economics and Policy	Creating a Market for Conservation - <i>Bruce I. Knight, Strategic Conservation Solutions</i>			
Outreach, Education, and Community Engagement	Moving Integrated Pest Management Practices Forward without Stepping Back in Conservation - <i>Jacqueline Pohl and Steve Bradbury, Iowa State University</i>			
3:00 PM - 4:30 PM	Oral Presentations			
	3:00 PM	3:23 PM	3:46 PM	4:09 PM
Applied Data in Agriculture		Alternative Management Practices: A Climate Corp and Pheasant Forever Partnership - <i>Bradley Griggs, The Climate Corporation</i>	Mustering Motivation and Mindset for the Measure-Monitor-Manage Mantra in Pasture Systems - <i>Ryan Lock, University of Missouri</i>	What We Learned on a Deep Dive into Conservation Innovation - <i>Bill Berry, NACD</i>
Back to the Future/ The Producer and the Plot	Landscape Design for Sustainable Bioenergy Systems through Conservation - <i>William W. Belden, Antares Group Inc.</i>	On-Farm Strip Trials Fuel Interactive Web-Based Tool for Optimal Agronomic and Conservation Decisions - <i>Suzanne Fey, Iowa Soybean Association</i>	The Dynamics of Changes in Producer Fields: Impact of Tillage and Cover Crops - <i>Jerry L. Hatfield, Retired</i>	The Prairie States Forestry Project: Looking Back to See the Way Forward - <i>Thomas Sauer, USDA ARS</i>
Conservation Models, Tools, and Technologies	Changes in Soil Plant Nutrient Status in a Long-Term Integrated Crop-Grazing System - <i>Larry J. Cihacek, North Dakota State University</i>	Characterizing the Impacts of Land Use on Nitrate Loads and Water Yield in an Agricultural Watershed in Atlantic Canada - <i>Kang Liang, University of New Brunswick</i>	Edge-of-Field Monitoring on Dairy Manure Applied Grass Fields in Western Washington - <i>Scarlett Graham, Whatcom Conservation District</i>	Retention of Swine Slurry Constituents in Soil and Crop Residue as Affected by Setback Distance - <i>John E. Gilley, USDA ARS</i>
Social Sciences Informing Conservation	A Portfolio Approach to Sustainable Nitrogen Management: Understanding Farmer Adoption of Multiple Best Management Practices - <i>Jessica Rudnick, University of California Davis</i>	Examining Farmer Perceptions of Conservation Practices across the Agricultural Cycle - <i>Maggie Beelstra, Ohio State</i>	Investigating Iowa Farmers' Acceptance of Targeted Conservation Approaches over Time - <i>Chris Morris, Iowa State University</i>	
Soil Health Resources, Indicators, Assessment, and Management	Daily Erosion Project: Effects of Flowpath Delineation Techniques on Estimating Runoff and Erosion - <i>Brian Gelder, Iowa State University</i>	Innovative Strategies for Soil Health in a Corn-Soybean Rotation - <i>Keith Berns, Green Cover Seed</i>	Soil Physical Responses from Integrating Cover Crops and No-Till Management to Agricultural Soils in the Mississippi Alluvial Valley - <i>Alexandra G. Firth, Mississippi State University</i>	The Use of Cover Crops to Improve Soil Quality: A Review - <i>Stephen H. Anderson, University of Missouri</i>

WEDNESDAY, JULY 29

SYMPOSIA SESSIONS

A Union Solider, Newspaper Cartoonist, and Two Soil Conservation Service Employees Walk into a Bar. Four Conservation Stories from American History

11:00 AM – 12:30 PM CT

Moderator: Joe Otto, SWCS

American history contains many important lessons about conservation. This symposium features four historians who bring different historical perspectives to the conservation discussion. The first presenter begins with a Civil War-era account of farming practices in the Northern and Southern United States, as observed by Union soldiers in their letters to home. The second presenter explores the origins of soil conservation in the United States through the life and career of pioneering soil conservationist Hugh Hammond Bennett. Keeping on the same theme, the third presenter explores the professional contributions of Hugh Hammond Bennett as he recalled them late in his life. The fourth presenter takes a closer look at the Soil Conservation Service's use of art and artists to convey complex conservation ideas to the American public. The underlying theme of this symposium is that conservationists come in many forms, influence the profession in different ways, and it is through those varied experiences that they take action and inspire others to act as well.

Presentation 1: "A Fine Country": Environmental Commentary from Civil War Correspondence – *Robert Welch, University of South Dakota*

Presentation 2: Hugh Hammond Bennett and the Origins of Soil Conservation in the United States – *Sam Stalcup, Independent Historian*

Presentation 3: Hugh Hammond Bennett's 1958/1959 Retrospective Lectures: Audio Tapes Bring a Conservation Legend to Life – *Tom Christensen, Retired USDA NRCS*

Presentation 4: Art and Conservation: The Interdisciplinary Vision of Felix Summers – *Shelby Callaway, USDA NRCS*

Advancing Water Quality and Conservation through Innovative Public-Private-Nonprofit Partnerships

11:00 AM – 12:30 PM CT

Moderators: Brad Jordahl Redlin and Danielle Isaacson, Minnesota Agricultural Water Quality Certification Program

Presenters: Spencer Herbert, Land O'Lakes Truterra, LLC; Tanner Bruse, Pheasants Forever Minnesota

The Minnesota Agricultural Water Quality Certification Program (MAWQCP) is a first of its kind, voluntary program that supports the implementation of conservation practices on a field-by-field, whole farm basis. The MAWQCP is a national demonstration project that utilizes an innovative process of identifying and mitigating agricultural risks to water quality and delivers on-farm conservation that helps protect and restore Minnesota's water resources. Key to the success of the MAWQCP are federal, state, and agricultural industry partners. By the end of 2019 the MAWQCP had 820 certified farms totaling 560,000 acres.

Since forming the cooperative in 1921, conserving land, water and air has been important to Land O'Lakes. Truterra, LLC, a subsidiary of Land O' Lakes, works with farmers and agricultural retailers to identify customized stewardship approaches best suited for each farm. Since 2016, Truterra has assisted farmers with MAWQCP certification by engaging and educating farmers on benefits, acting as advisors in grant processes, and harnessing existing data collection capabilities. In 2020, Truterra and the MAWQCP will be launching new technology to connect the Truterra Insights Engine and MAWQCP Assessment Tool. This collaboration will engage new co-ops and producers in certification while providing further benefits to Truterra clientele.

Pheasants Forever is dedicated to the conservation of pheasants, quail, and other wildlife through habitat improvements, public awareness, education, and land management policies and programs. In 2019, Pheasants Forever and the MAWQCP convened numerous stakeholders to develop a wildlife endorsement as an add-on to water quality certification. The wildlife endorsement recognizes outstanding farmers for their conservation excellence and encourages greater conservation adoption. This collaboration has served as a model for the development of additional MAWQCP endorsements, including soil health.

WEDNESDAY, JULY 29

Collaboration in Conservation: Women Farmland Owners-Tenant Relationships and Conservation Action

11:00 AM – 12:30 PM CT



Moderator: Angie Carter, Michigan Tech University

Presenters: Andrea Basche, University of Nebraska; Jean Eells, E Resources Group; Mayrene Bentley, Landowner in Atchison County, Missouri; Dawn Nielsen, Landowner in Dodge County, Nebraska; Marilee Polacek, Landowner Butler County, Nebraska; Chris Henning, Landowner Greene County, Iowa

This symposium shares concrete examples of strategies supporting collaborative conservation planning with women landowners through two USDA Sustainable Agriculture Research and Education (SARE) Partnership projects in Iowa and Nebraska. Meeting soil health and water quality conservation targets requires increased support for landowners, as well as improved collaboration with tenants. Women, Food, and Agriculture Network has found that targeted

interventions translate into changes on the ground. Yet, research by copresenters has identified outreach and collaboration challenges, including differing expectations in landowner-tenant relationships and agricultural professionals' understanding of where to begin in nonoperator landowner engagement.

Researchers will facilitate the symposium, sharing preliminary findings and identifying intervention opportunities. In Nebraska, researchers interviewed tenants and landowners to identify land management goals, and University of Nebraska-Lincoln students created conservation plans for three farmland owner-tenant pairs. Landowners will share how the project supported land and long-term goals, including lease agreements, cost-share programs, and potential shifts in tenant relationships. Additionally, the project influenced students' (the next generation of land managers and operators) knowledge and understanding about landowners' conservation support and the importance of landowner-tenant relationships to the long-term viability of operations. In Iowa, women




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WEDNESDAY, JULY 29

farmland owners who have successfully integrated cover crop adoption in their farmland management are being trained as cover crop champion landowners, sharing their story about how landowners can support adoption of new practices. The challenges of framing the story of unique landowner roles for women will be discussed. This symposium will be of interest to agricultural professionals advising landowners and tenants in conservation adoption.

Agricultural Conservation and Water Quality Research in the Iowa River's South Fork Watershed

11:00 AM – 12:30 PM CT

Moderator: Mark Tomer, USDA ARS

The South Fork of the Iowa River (SFIR) watershed is a USDA Conservation Effects Assessment Project (CEAP) watershed located in north-central Iowa. The landscape is gently rolling and poorly drained, comprised of "recent" glacial deposits (approx. 12,000 years). Agricultural drainage systems installed in

the early 1900s have allowed the original wetland and prairie soils to become among the world's most productive agricultural lands; today about 90% of this 200,000 acre watershed is in crop production. There are also about 100 livestock feeding operations, mostly producing swine. Water quality issues, particularly high loads of nitrate-nitrogen, were identified in the mid-1990s through stream monitoring conducted by the US Geological Survey under the National Water Quality Assessment (NAWQA). Subsequently, the Southfork Watershed Alliance was formed, becoming the first farmer-led watershed group in Iowa. The USDA Agricultural Research Service extended stream and tile monitoring efforts in the early 2000s, which led to its designation as a CEAP watershed around 2004. Since then, the watershed has become a test bed for watershed-scale agroecosystem research, with projects that have focused on conservation practice effects, watershed and groundwater modeling, precision conservation, stream channel movement and sedimentation, remote sensing of crop residue and soil

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moisture, aquatic ecology, and new stream monitoring technologies. This symposium will overview a selection of these activities and the pivotal role of producer involvement in ensuring research success. Significant challenges remain in the effort to reduce agricultural impacts on water quality in this watershed.

Presentation 1: The Southfork Watershed Alliance, a Producer-Led Organization Promoting Agricultural Conservation – *Melissa Miller, Southfork Watershed Alliance President and Producer*

Presentation 2: Monitoring Stream Biota in the SFIR as Part of a State-Wide Program – *Jason Palmer, Iowa Department of Natural Resources*

Presentation 3: Monitoring Spatial Patterns in SFIR Water Quality Using an Aquatic Drone – *Taylor Vroman, Drake University*

Presentation 4: Remote Sensing of Soil Moisture and Crop Residue in Northern Iowa – *Craig Daughtry, USDA ARS*

Presentation 5: Modeling Hydrology and Nitrogen Transport in the SFIR Using Agricultural Ecosystems Services (AgES) – *Tim Green, USDA ARS*

Presentation 6: Water Quality in the SFIR Watershed: Status, Trends, Challenges, and Opportunities – *Mark Tomer, USDA ARS*

Accelerated Soil Health Training, Indicators, Assessment, and Management Systems

11:00 AM – 12:30 PM CT

Moderator: Doug Peterson, USDA NRCS

Presenters: Bianca Moebius-Clune, USDA NRCS; Barry Fisher, USDA NRCS; Nick Smith, Producer from Epworth, Iowa; Rodney Rulon, Producer from Arcadia, Indiana; Jimmy Emmons, Producer from Leedey, Oklahoma

The USDA Natural Resources Conservation Service (NRCS) has been a leader in promoting soil health. In 2014 it established the Soil Health Division (SHD) to lead the agency's strategies and training, with the goal to facilitate producer implementation of science-based, effective, resilient, economically viable soil health management systems on the nation's diverse agricultural lands. In collaboration with partner organizations, the agency has been providing training, direct assistance, science and technology integration, and leadership to soil health efforts across the country. The SHD has assisted in elevating the technical

capacity of our field office employees, partners and producers. Join SHD Director Bianca Moebius-Clune and Central Team Leader Barry Fisher as they highlight training efforts and some of the technical advances made for enabling successful soil health management systems adoption with the development of soil health assessment tools, identification of new resource concerns, financial assistance, new management strategies, and decision tools in development.

Through training and by developing relationships with innovative producers, researchers, nongovernmental organizations, and industry, we pioneer and promote soil health advances and technology. As a result, increased adoption of soil health management systems and practices is happening throughout the country. Throughout this focused effort, many producers have embraced soil health while working with their local field office to improve soil function on their farms. Doug Peterson, Central Regional Soil Health Specialist, will moderate a panel of producers—Nick Smith (Iowa), Jimmy Emmons (Oklahoma) and Rodney Rulon (Indiana)—as they tell their stories about how they integrated soil health on their operations and how NRCS was instrumental in that effort.

Interconnections between Extreme Weather, Flooding, Conservation, and Flood Control Policy

1:00 PM – 2:30 PM CT

Moderator: Francisco Arriaga, University of Wisconsin-Madison

The 21st Annual Joint SWCS–SSSA (Soil Science Society of America) Symposium will be held at the 2020 SWCS annual meeting in Des Moines, Iowa, and at the SSSA annual meeting in Phoenix, Arizona. Previous joint symposia have been very successful and contributed to the development of special issues, research editorials, features, books, and/or other significant technology transfer efforts.

Extreme weather events are becoming more frequent and/or severe in the United States and around the world. Increasingly frequent and/or severe weather events, in particular the occurrences of excess precipitation, have resulted in serious consequences for society and the environment. Along with the devastating effects of flooding in urban and agricultural areas, the erosion that occurs with these rainfall-related extreme weather events is going to be accelerated,

WEDNESDAY, JULY 29

leading to many consequences including nutrient loss, sedimentation, and eutrophication. According to published reports, between 2011 and 2013, the United States experienced 32 weather events that each caused at least one billion dollars in damage. Science based solutions, founded in implementation of soil and water conservation practices, are necessary to mitigate the effects of these conditions.

Water resources, management strategies, and soil conservation planning are of very high interest to members of both SWCS and SSSA. This joint symposium aims at bringing together scientists, conservation practitioners and policy representatives to examine water resources, management strategies, conservation planning, plan implementation, and evaluation for achieving mitigation of flooding due to extreme weather events. This joint symposium will continue the tradition of cooperation between these professional societies and help bring together scientists, conservation practitioners, and other national and international cooperators.

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Presentation 1: Can the Soil Save Us? Opportunities for Ecologically Based Management to Mitigate Flood-Related Risks – *Andrea Basche, University of Nebraska–Lincoln*

Presentation 2: Using landscape Opportunities to Increase our Resilience against Climate Extremes and Flooding – *Keith Schilling, Iowa Geological Survey*

Presentation 3: Conservation Drainage: Managing Water for the Future – *John McMaine, South Dakota State University*

Presentation 4: Identifying Barriers and Opportunities to Adopt Natural Infrastructure – *Michelle Hemler, Purdue University*

Biochar from Forest to Farm

1:00 PM – 2:30 PM CT

Moderator: Carlos Rodriguez-Franco, US Forest Service

With increasing global population with limited amount of arable land, meeting future needs of global food production will be a challenge. Restoring soil quality in low productive soils and sustaining productivity of highly productive soils will be a key in meeting the future global food production and food security needs. Application of biochar from forests to farmlands offers the opportunity to restore productivity by increasing soil organic matter content and water retention among other benefits. In this panel we will discuss the forest-to-farm concept and the ecosystem services to be gained by forestry, agroforestry, and agriculture with biochar for restoring riparian areas, pond filtration, animal bedding, and soil and crop productivity in agricultural lands. Biochar is an emerging commercial product with high potential for a wide variety of applications. Because biochar can be made from forest biomass, it presents an opportunity to promote forest management in areas with high risk for wildland fire. These forests can be thinned to both reduce fire risk and provide biomass for biochar production. Biochar has potential applications in waste management, renewable energy, greenhouse gas emission reduction, mine site reclamation, and soil and water remediation, as well as its potential for enhancing soil health and crop productivity. In addition, high-carbon biochars contain 70% to 90% carbon, and when used as a soil amendment, biochar is a perfect tool for sequestering carbon within the mineral soil. If biomass is sustainably harvested, biochar supply chains can be carbon-negative.

WEDNESDAY, JULY 29

Presentation 1: Forest Management for Multiple Uses – *Jim Archuleta, US Forest Service*

Presentation 2: Methods to Manufacture Biochar and Its Benefits – *Tom Miles, US Biochar Initiative*

Presentation 3: Biochar as a Forest Product to the Support Farm Needs – *Debbie Dumroese, US Forest Service*

Innovation Using USDA NRCS Conservation Practice Standards

1:00 PM – 2:30 PM CT

Moderator: Dana Ashford-Kornburger, USDA NRCS

The USDA NRCS Conservation Practice Standards (CPS) are science-based and developed to address resource concerns; however they also include innovative technologies and methodologies. Practices include everything from variable rate nutrient management plans and using autonomous robots for pest control to addressing the complexities of wildlife habitats and improving bivalve aquaculture. Join agency discipline leads as they provide an

overview of some recently updated CPSs and highlight innovative implementation. The symposium will include presentations on CPS Nutrient Management (Code 590), Pest Management Conservation System (Code 595), Wildlife Habitat Planting (Code 420), Restoration of Rare or Declining Natural Communities (Code 643), and other recently updated CPS.

Presentation 1: How NRCS Refined and Enhanced Conservation Practice Standards and Increased Flexibility for Future On-Farm Conservation Innovations – *Bill Reck, USDA NRCS*

Presentation 2: Innovation in Nutrient Management – *Dana Ashford-Kornburger, USDA NRCS*

Presentation 3: Innovation in Aquatic Ecology – *Jan Surface, USDA NRCS*

Presentation 4: Innovation in Pest Management – *Lindsay Haines, USDA NRCS*

Presentation 5: Innovation in Providing Wildlife Habitat; It Goes Beyond the Practices – *Danielle Flynn, USDA NRCS*

Environmental Stewardship Comes Naturally for Farmers

Strong soils and clean water go hand-in-hand with productive and resilient soybean farms.

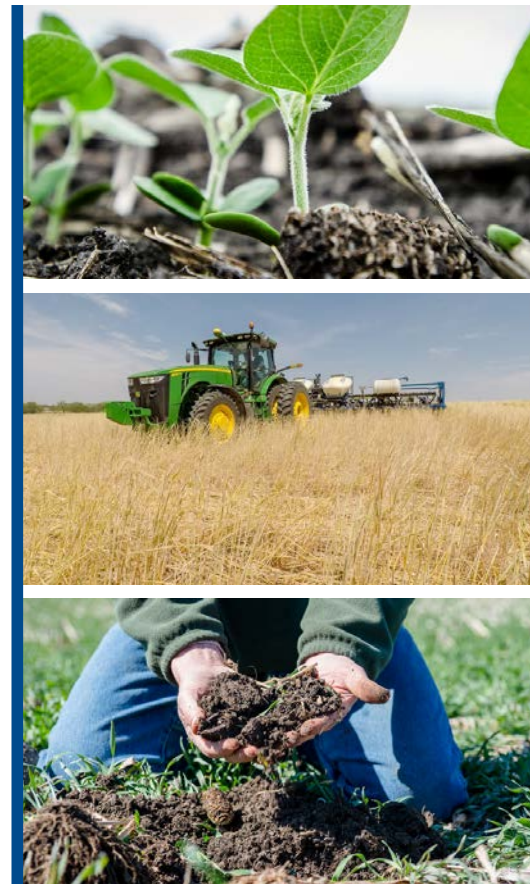
The Iowa Soybean Association is **DRIVEN TO DELIVER** the tools, expertise and resources empowering farmers and landowners to make the most of this connection.

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DRIVEN TO DELIVER

WEDNESDAY, JULY 29

Nutrient Reduction Wetlands at Lake Panorama in Iowa

1:00 PM – 2:30 PM CT

Moderator: Luke Monat, Shive-Hattery

Presenters: John Rutledge, Lake Panorama Association; Dan Jensen, Shive-Hattery

The Lake Panorama Rural Improvement Zone (RIZ), a local government body formed in 1998, serves to improve Lake Panorama and its watershed through funding of erosion control, sediment removal, and water quality improvements.

Over the past 5 years, the RIZ has partnered with the Iowa Department of Agriculture and Land Stewardship (IDALS), the Conservation Reserve and Enhancement Program (CREP), and Soil and Water Conservation Society (SWCS) to construct three wetlands upstream of Lake Panorama with a fourth wetland in the planning stages. The three constructed wetlands are similar but serve specific purposes to accommodate site conditions as well as keeping the unique goals of each project stakeholder in mind to foster a mutually beneficial project. Monitoring of two constructed wetlands was conducted by Iowa State University and IDALS and began in 2018.

The RIZ is executing a phased approach to lake restoration by first making improvements upstream utilizing edge of field wetlands to reduce sediment and nutrient loading to the lake. They aimed to reduce the incoming pollutants before completing hydraulic dredging within the lake, which is now an ongoing effort through 2020.

Our presentation will discuss these projects in detail including how the unique partnerships were formed and maintained, how the projects areas were targeted, how the projects were executed, and the sampling results to date.

Leadership for Midwestern Watersheds: Scaling Up Conservation through Networking

1:00 PM – 2:30 PM CT

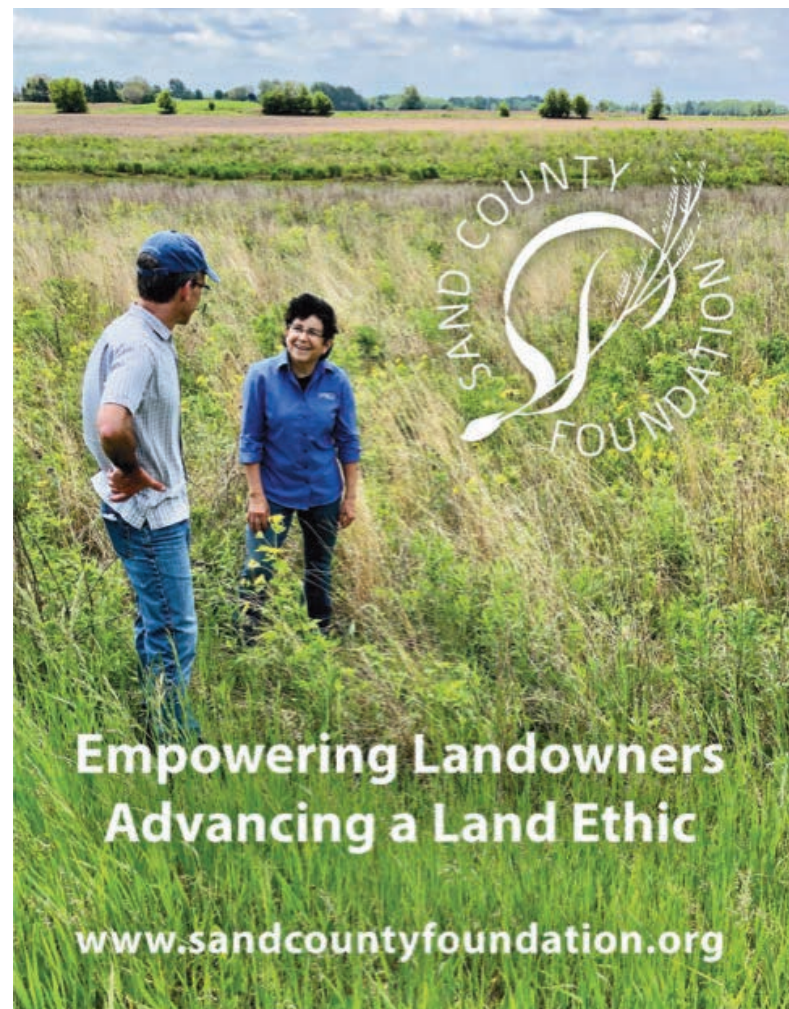
Moderator: Craig Ficenec, Sand County Foundation

Leadership for Midwestern Watersheds (LMW) is a unique, annual forum for coordinators of water quality improvement projects that reduce agricultural runoff in watersheds of the Upper Mississippi River Basin. Since 2011, Sand County Foundation (SCF) and partners

(North Central Region Water Network, American Farmland Trust, Iowa Soybean Association, and Soil and Water Conservation Society) have delivered twelve LMW events across Illinois, Iowa, Minnesota, and Wisconsin, engaging over 200 professionals.

“Watershed coordinators” facilitate voluntary conservation action on agricultural lands among multiple partners within a defined hydrologic boundary, for the primary purpose of improving water quality. Watershed coordinators and those conservation professionals with similar positions, provide high value human capital, a necessary element for scaling up land and water conservation efforts.

The annual LMW workshop series features presentations and facilitated discussions on subjects essential to successful watershed projects, such as farmer engagement, geospatial planning tools, project financing, and water quality monitoring.



WEDNESDAY, JULY 29

LMW is focused on developing a “community of practice” among conservation practitioners who work to improve water quality with landowners, agencies, and businesses, one watershed at a time. Water quality success stories in agricultural watersheds are significant, but isolated. The LMW network builds capacity of farming and conservation leaders at the watershed scale by stimulating knowledge exchange and accelerating outcomes among watershed projects, helping each state to meet its nutrient reduction goals.

During this symposium, we will share survey results of LMW meeting participants concerning needs for ongoing peer-learning and engagement in addition to the annual events. A panel case study discussion, consisting of advisory team participants and watershed coordinators, will define the key attributes for a successful watershed project.

Presentation 1: Watershed Coordinators as Part of a Successful Watershed Management System – *Rebecca Power, University of Wisconsin-Madison Division of Extension and North Central Region Water Network*

Presentation 2: Case Studies in Sharing Successful Watershed Project Strategies – *Todd Sutphin, Iowa Soybean Association; Rose Danaher, Iowa Department of Agriculture and Land Stewardship; Kevin Kuehner, Minnesota Department of Agriculture; Douglas Bos, Rock County Soil and Water Conservation District/Land Management Office*

Presentation 3: Surveying Watershed Coordinator Needs to Advance Successful Projects – *Craig Ficenec, Sand County Foundation*

Conservation Outcomes: The Influence of Legacy Nutrients and Lag Time

1:00 PM – 2:30 PM CT

Moderator: Lisa Duriancik, USDA NRCS

It has been revealed through watershed and water resource assessments that two factors are of significance to both assessing outcomes of conservation efforts as well as determining effective conservation strategies: legacy sources of nutrients and sediment as well as lag time. Evidence as well as modeling have suggested that legacy sources of nutrients and sediment could have an influence on achieving water quality goals and outcomes. Determining the legacy of past generations' impact on

water quality is critical to understanding agriculture and conservation impacts on the current annual live load of sediment or nutrients. Performance of practices applied cannot be adequately attributed in streams without understanding the significance of the contribution of legacy loads. Legacy sources can be stored within the field itself or in the ditch or stream network (banks, beds, gullies, etc), and in groundwater. These two pools of legacy nutrients or sediment can be subject to different processes and pathways, and as such require different conservation practices for effective treatment. Assessments can yield helpful insights into which types of conservation strategies may be more effective. Lag time also has a significant influence on ability to detect water quality outcomes of conservation.

New assessments and novel techniques are being developed to measure legacy sources and lag time. These new techniques are being applied in Conservation Effects Assessment Project (CEAP) Watersheds and others in high priority water resource regions to quantify for the first time and elucidate the scope and relative significance on processes, transport mechanisms, and loads. Interagency and other partnerships will expand capacity and capability to sample and analyze legacy sources and lag time both spatially and temporally. Data and insights from new assessments will be used to devise more effective conservation strategies and opportunities to enhance progress towards water quality goals.

Presentation 1: The Importance of Legacy Nutrients: Current and Historic Agricultural Phosphorus Imbalances and Water Quality Impacts – *Lori Sprague, US Geological Survey*

Presentation 2: Assessing Legacy Phosphorus Losses from Fields and Watersheds in the Western Lake Erie Basin – *Chad Penn, USDA ARS*

Presentation 3: Phosphorus and Conservation Practices: Legacy Considerations – *Deanna Osmond, North Carolina State University*

Presentation 4: A Novel Approach for Watershed Lag Time Assessments – *Greg McCarty, USDA ARS*

WEDNESDAY, JULY 29

2018 Farm Bill and Source Water Protection: Partnerships and Collaborative Approaches to Protect Drinking Water Sources

3:00 PM – 4:30 PM CT

Moderator: Sylvia Malm, Source Water Protection Collaborative Partnerships

Presenters: Jon Hubbert, USDA NRCS; Christina Murphy, West Des Moines Water Works; Adam Schnieders, Iowa Department of Natural Resources

The 2018 Farm Bill provides new opportunities to work with USDA's Natural Resources Conservation Service (NRCS) for the mutual goal of water quality protection and improvement, with a new emphasis on drinking water sources.

This panel of experts from NRCS, water utility, and state source water program leadership will share tips on forming partnerships, laying the groundwork to seek funding, and their experience with success stories as well as challenges.

We all drink water, yet most Americans are unaware of where their drinking water comes from and the role they can play in protecting it. Information about drinking water sources, partnerships, and conservation practices play a critical role in creating protective landscapes that safeguard both surface water and groundwater drinking water sources from contamination.

In May of 2019, the Soil and Water Conservation Society joined the national Source Water Collaborative (sourcewatercollaborative.org) to support safe, plentiful drinking water for everyone. The Collaborative shares information and opportunities to promote and facilitate collaborative efforts to protect drinking water sources at the state, regional, and local levels. In this session we will share how water utility staff, state source water and conservation leaders, urban and agricultural community members, and conservation professionals, have used data, partnerships, and relationships to shift from a reactive to proactive mindset in protecting local drinking water sources. Presenters will discuss opportunities at the state and local levels to share information, identify priorities, and advance protection of drinking water sources. Keys to success include building trust and enthusiasm for source water protection in small rural communities as well as communities with larger populations, fostering relationships between utilities, partners, and

landowners/agricultural producers, and leveraging funding opportunities. The presenters will share insights to inspire audience members to engage in source water planning and protection efforts in their local communities, working with conservation districts, NRCS, and other partners, whatever their experience or profession. Come to learn about effective partnerships and new resources to protect drinking water sources, and bring your questions.

Seeding Change by Saving Tomorrow's Agricultural Resources (STAR): An Overview of the Development, Implementation, and Expansion of the STAR Program

3:00 PM – 4:30 PM CT

Moderator: Emily Bruner, American Farmland Trust

There is an urgent need for accurate and reliable assessment of current conservation practice adoption rates and the development of simple, consistent methodologies for aggregating the benefits of these practices into metrics that are useful to a diversity of audiences. The Saving Tomorrow's Agriculture Resources (STAR) Initiative was designed to respond to this demand by providing a means for farm operators and landowners to evaluate, measure, and increase their use of conservation practices based on locally identified resource concerns.

STAR is a free tool that uses a one-page, 17-question field form to request information concerning field management and conservation practices, assign points to each practice, and provide a STAR Rating ranging from one to five stars. The goal of the program is not only to evaluate the use of conservation practices, but also to educate participants about the benefits of additional management changes and encourage increased adoption.

From its origins in Champaign County, the STAR Initiative has expanded to 67 counties statewide, with signed agreements for the program to be offered in Iowa, Missouri, and Indiana and interest from the National Association of Conservation Districts and several other states. During this 90-minute symposium, the presenters will provide an overview of STAR, detailing the initiative's history, implementation, and future directions.

Presentation 1: STAR Introduction: From Grass Roots

WEDNESDAY, JULY 29

to Continuous Cover – *Erin Bush, Champaign County Soil and Water Conservation District*

Presentation 2: STAR Outcomes: Practice Tracking and Environmental Performance – *Emily Bruner, American Farmland Trust*

Presentation 3: STAR Opportunities: Identifying and Assigning Value for Multiple Partners – *Megan Baskerville, The Nature Conservancy*

Creating a Market for Conservation

3:00 PM – 4:30 PM CT

Moderator: Bruce I. Knight, Strategic Conservation Solutions

Presenters: The Ecosystem Services Market Consortium Team: Caroline Wade, Paul Meints, Benjamin Bartley, Cassie Aherin; Patrick Lawrence, Repliculture; Mike Komp, Conservation Technology Information Center

The Ecosystem Services Market Consortium (ESMC) is launching a first ever combined market for carbon, water quality and water quantity credits. The symposium panel will share learnings from initial program development and piloting. Participants will discuss success and challenges as well as preliminary results from technical research projects underway to support the launch of this innovative and forward leaning market designed to enhance the value of soil health practices.

Moving Integrated Pest Management Practices Forward without Stepping Back in Conservation

3:00 PM – 4:30 PM CT

Moderators: Jacqueline Pohl, Iowa State University and Steve Bradbury, Iowa State University

No-till is an example of success in the farming world, especially in the Loess Hills in western Iowa. Farmers have embraced the value of no-till farming, preventing soil erosion and building fertility at the same time. What could upset this trend now that farmers see the value of no-till and have profited from it?

Consider weed resistance: as weeds like waterhemp become resistant to more and more herbicide modes of action, farmers find themselves considering a practice many gave up years ago: tillage. Most farmers consider no-till essential in the Loess Hills. It slows soil erosion, preserves soil health, and protects water quality. It has even improved productivity on the hillsides. But farmers

know weeds are not resistant to steel... so how can we preserve the current pest management tools to prevent farmers from needing to return to tillage?

The need to delay and manage the threat of pest resistance of weeds, insects, and plant diseases inspired a new approach in Iowa. The statewide effort started with collaboration of the entire agricultural community. The result of these efforts was the Iowa Pest Resistance Management Program, which was introduced in 2017 with the goals of slowing resistance development; fostering methods of early resistance detection and mitigating resistance when it develops; and increasing awareness within the entire agricultural community that pest resistance is here and must be addressed to preserve agricultural profitability.

To begin, four community teams formed to find local solutions to local pest issues, with the goal of expanding the efforts statewide. These teams initially focused on weeds, soybean aphids, and western corn rootworm. The Harrison County Pest Resistance Management Project is the most advanced pilot, focusing on waterhemp, marehail, giant ragweed, Palmer amaranth, and disease resistance. The Harrison team is passionate about beating resistant weeds.

Join us to learn about

- Harrison County project progress and the statewide effort
- Integrated pest management practices to preserve pest management tools while protecting soil and water quality
- A sociological perspective about Harrison County team formation, commitment, and motivation

Presentation 1: Iowa Pest Resistance Management Program (IPRMP) Statewide Effort – *Steve Bradbury, Iowa State University*

Presentation 2: Loess Hills in Western Iowa – *Larry Buss, President of Harrison/Crawford County Corn Growers Association*

Presentation 3: IPM Techniques to Manage Weeds Well and Ways to Protect Soil and Water Quality – *Mike Witt, Iowa State University Extension*

Presentation 4: What Has Been Learned from the Harrison Effort to Create a Cohesive Community Team with Cohesiveness and Common Goals – *Paul Lasley, Iowa State University*

2020 SWCS AWARDS

Congratulations to the 2020 SWCS award winners!
Visit the **SWCS Awards** tab of the online platform to view this year's award winners.

INDIVIDUAL AWARDS

Hugh Hammond Bennett Award

The Society's most prestigious award, recognizes extraordinary accomplishments in the conservation of soil, water, and related natural resources.



Jean L. Steiner

The Hugh Hammond Bennett Award for 2020 is presented to Jean L. Steiner, who is recognized internationally as an authority on irrigated

and rainfed cropping, crop residue management, evapotranspiration, watershed management, and integrated systems research. Steiner began her research career working on sustainability issues related to irrigated agriculture in the Ogallala Aquifer and in southeastern Australia, which faced severe challenges due to overallocation and salinization, respectively. She has led research at three locations with the USDA Agricultural Research Service (ARS), adding depth to the research programs at each location by increasing collaboration between the research unit and other ARS locations, as well as university other federal partners. Steiner has provided crucial leadership to three major ARS initiatives. As a part of the Conservation Effects Assessment Project (CEAP), she set the framework for a new approach to data management within ARS for more than a dozen watershed projects through STEWARDS. Steiner was the director and supervisor for USDA's Southern Plains Climate Hub, a robust regional partnership of USDA; other federal, state, and local agencies; universities; and private sector entities who develop and deliver improved adaptation and mitigation strategies for Southern Plains agriculture. She contributed to the Long-Term Agroecosystem Research (LTAR) network, which is a national network within a regional context focusing on integrated crop, forage, and livestock systems with a mission to develop and deliver improved technologies, strategies, and planning tools for economic and environmental tradeoff evaluation under variable climate, energy, and market conditions. She played a crucial role for LTAR as a member of the Leadership Committee, Research Steering Committee and lead of the Southern Plains

LTAR site at El Reno until her retirement from ARS. Steiner's research program was supported through external partners to the tune of more than \$22 million, culminating with co-leadership of the Grazing Coordinated Agricultural Project (CAP), a regional project focused on resilience of beef-grazing systems in the face of variable and changing climate. She has been on graduate committees for a dozen PhD students. Additionally, she has played crucial roles in leadership of professional societies, including SWCS. She served as the president of the American Society of Agronomy in 2015. Since 1994, Steiner has served SWCS at the chapter and national levels, including as the Georgia Chapter president, the Oklahoma Chapter president, as a board member and two terms as president from 2004 to 2006.

Fellow Award

In recognition of SWCS members who have performed exceptional service in advocating the conservation of soil, water, and related natural resources. Fellowship is an honor bestowed upon the best in the conservation profession.



Chris Gross

Chris Gross is the Senior Nutrient Management Specialist on the USDA NRCS National Water Quality and Quantity Technology Development Team. Gross is a national leader in technology development and transfer to NRCS peers, consultants, and farmers. He has worked in teams that contributed to the development or improvement of the USDA ARS NLEAP GIS and Nitrogen Index, which have been applied to conduct assessments across 97 million acres and been downloaded thousands of times from users from over 90 countries. He has contributed to the Nutrient Management National Conservation Practice Standard; Phosphorus Index; Southern Extension and Research Activity-17 efforts to transfer technology concepts to states; Conservation Effects Assessment Project; Soil Vulnerability Index; soil health efforts; and Integrated Crop Management efforts. For decades Chris has contributed to technology transfer efforts to help reach NRCS personnel in field offices and helped

2020 SWCS AWARDS

conduct national and international training workshops. He has served on the annual SWCS–SSSA (Soil Science Society of America) joint symposium committee, which since 2000 has helped organize over 40 symposiums, together reaching thousands of members. Chris's positive impacts on SWCS and on the development and on-the-ground implementation of soil and water conservation practices and technologies nationally and internationally have built an outstanding national and international reputation in the management of soil and water resources.



David Lobb

David Lobb is a professor in the Department of Soil Science at the University of Manitoba. Lobb's research focuses on tillage erosion and extends to wind and water erosion, in an effort to understand how soil erosion affects biophysical

properties and processes on cultivated land and within larger landscapes and watersheds. Lobb has made and continues to make significant contributions in all aspects of his research. Noteworthy scientific achievements include enhancement of methods used to measure soil translocation by tillage; understanding of the process of tillage erosion; development of models of tillage erosion; integrated assessments of soil erosion by wind, water, and tillage for Canada, including economic impacts; and recognition that plant residues are a major source of nutrients transferred from land to surface waters in cold climates. He has also contributed substantially to a variety of national and international scientific and advocacy organizations, including notable contributions to the SWCS over the last 33 years that he has been a member. Beyond the scientific studies, Lobb has dedicated his efforts to the transfer of knowledge gained through publications, presentations, and training directed at current and future managers of our land and water resources. Lobb is a valuable mentor and has helped his students grow into independent researchers on soil water conservation.

Deanna Osmond

Deanna Osmond is Professor, Extension Specialist, Extension Leader, and Associate Department Head of Crop and Soil Sciences at North Carolina State University. Osmond was hired to work at the interface



of nutrient management, conservation practices, and water quality. Over approximately 30 years, she has provided research and extension programming focused on reducing nutrient losses from agricultural fields to water resources. Her work at the field-scale has ranged from documenting effectiveness of riparian buffers to measuring

nutrient and sediment losses from different tillage and cropping systems. Watershed work included a multidisciplinary watershed study in North Carolina, which led to a change in policy for this impaired watershed. Other watershed-scale work included leading a national USDA National Institute of Food and Agriculture–Conservation Effects Assessment Project (NIFA–CEAP) watershed study that synthesized the relationship between conservation practices and water quality change, and was published by the SWCS in the book, *How to Build Better Agricultural Conservation Programs to Protect Water Quality: The NIFA–CEAP Experience*. Results from the watershed synthesis have affected several federal agencies, including the NRCS, and have been effectively delivered through multiple outreach mechanisms to the appropriate audiences, be they farmers, other stakeholders or colleagues, or federal agencies. Osmond has organized otherwise disparate groups into unified, powerful, coherent voices that guide decision-makers in shaping modern conservation and nutrient management strategies.

Conservation Innovation Award

In recognition of an outstanding activity, product, or service by a group, business, firm, corporation, or organization that promotes natural resource conservation.



Rice Irrigation Water Management Field Day Team

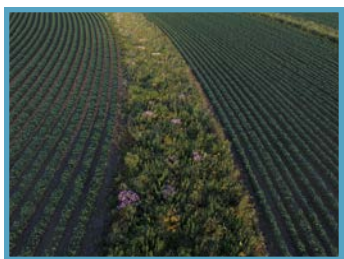
The Rice Irrigation Water Management Field Day Team, located in Mississippi County,

Arkansas, consists of an exceptional group of conservationists that includes world-class researchers, farmers, industry leaders, and conservation education outreach professionals. The annual field day highlights

2020 SWCS AWARDS

innovative farming practices focused on reducing agriculture's environmental impacts while protecting crop yield and profit. The field day began in 2015 as an on-farm research tour on the Sullivan family-owned rice/soybean farm which has a long history of supporting university and USDA research and has grown into an annual event. Attendees travel from more than six states to Burdette, Arkansas, to hear from innovative producers, researchers, and conservation educators about irrigation water management practices (IWM), primarily with rice. The field day is coordinated by the local Mississippi County NRCS, highlights replicated field-scale IWM research studies by scientists with the USDA ARS Delta Water Management Research Unit, and provides an overview of conservation tools available from industry leaders, including RiceTec and Delta Plastics. Irrigation water management has been the chief focus of the field day. Florenden Farms lies in the Lower Mississippi River Basin (LMRB) region, which includes over 70% of total US rice production on 1.97 million acres across five states. LMRB rice is grown using a constant flood culture with groundwater drawn primarily from the Mississippi River Valley Alluvial Aquifer, which is declining primarily due to irrigation for agriculture. Conventionally irrigated rice receives three to five times the irrigation applied to other crops and, thus, contributes disproportionately to aquifer decline. Included in the 2017 to 2019 field days were field-scale research comparing conventional cascade flooding to alternate wetting-drying flood management (AWD), multiple-inlet rice irrigation (MIRI), and row rice. Results from this and previous rice research have shown that irrigation applications can be reduced by up to 50% relative to conventional practices. Information highlighted at the field day has been used by farmers, industry, and other conservation partners. For these reasons and many others, this team's exceptional public-private conservation effort is most deserving of the SWCS Conservation Innovation Award.

determine how prairie strips on commercial farm fields impact the provision of ecosystem services, including crop yields, water infiltration, soil development, nutrient retention, carbon sequestration, clean water, and the abundance and diversity of native species including pollinators. In addition, this effort aides in improving methods for market and nonmarket valuation of ecosystem services from prairie strips. This integrated research and outreach effort involved agronomists, ecologists, entomologists, hydrologists, economists, sociologists, and soil scientists. STRIPS has been conducting research on prairie strips since 2007, and research results have been covered by national media outlets, including the New York Times, Washington Post, National Public Radio, Audubon, Corn and Soybean Digest, Iowa Farm Bureau, and Successful Farming. Overall scientific results have been published in 52 peer-reviewed scientific articles including the Proceedings of the National Academy of Sciences of the United States (PNAS). Results and recommendations have been made accessible to farmers and farm landowners through brochures, infographics, and extension publications. STRIPS has presented on their research nearly 500 times in 33 states and 8 countries, reaching nearly 20,000 attendees. STRIPS and partners have directly worked with 66 collaborators in six states to implement nearly 600 acres of prairie strips that protect about 6,000 acres of cropland. The prairie strips practice is being implemented nationally to protect soil and water and provide wildlife habitat. The STRIPS team is exemplary in fostering the science and art of natural resource conservation; the team is committed to science, and is driven by their passion for stewardship and sustainability. For these and other reasons, STRIPS is most deserving of the 2020 SWCS Conservation Innovation Award.



Science-Based Trials of Row Crops Integrated with Prairie Strips

The mission of the Science-based Trials of Row Crops Integrated with Prairie Strips (STRIPS) is to



2020 SWCS AWARDS

Harold and Kay Scholl Excellence in Conservation Award

In recognition of individuals who work on the ground to provide direct and personal delivery or conservation planning and technical assistance.



Neil Shaffer

Neil Shaffer, Watershed Project Coordinator of the Silver Lake Water Quality Project in northeast Iowa, has done a fantastic job of putting together a variety of different local,

state, and federal financial resources in order to get conservation practices on the ground, resulting in over 70% participation rate by landowners. Since the start of this project, over \$6.4 million have been spent on a wide array of programs. In FY 2019 alone, Shaffer and his partners helped secure \$995,000 to install a variety of conservation practices within the watershed. These practices reduced the amount of sediment delivered annually to Silver Creek by 1,462 tn, associated phosphorus by 1,964 lbs, and nitrogen by 2,924 lbs. Bacteria levels also continue to reduce according to data from water monitoring. Shaffer uses a variety of outreach methods including watershed tours, award banquets, outdoor classrooms, newsletters, postcards, local radio station interviews, regular bimonthly articles, a presence on social media, and most importantly, meetings with landowners one on one to discuss conservation strategies for their farms. A significant signal of success of conservation efforts in the watershed is the return of a self-sustaining population of brook trout after 40 years of being absent. These efforts and results make Neil Shaffer well-deserving of the Scholl Award.

Conservation Professional of the Year Award

In recognition of outstanding accomplishments in practicing and advancing the science and art of natural resource conservation.

Jay Fuhrer

Jay Fuhrer has been a leader in soil health for over 40 years and has been globally considered an expert on soil health and regenerative agriculture for the last 20 years. He became a sought-after worldwide



expert for soil health, all arising from Burleigh County, North Dakota, working with the USDA NRCS. Fuhrer's interest in soil health resulted in numerous speaking engagements within the United States, Argentina, Australia, Canada, Denmark, France, Germany, Russia, and South Africa. However,

he is most noted for his work in helping lead the Burleigh County Soil Conservation District to develop the "Menoken Soil Health Demonstration Farm," which demonstrates promising new practices for local family farmers and those around the globe. The farm also hosts an education no-till garden where many people have come to learn about local food production and ways to sustain natural resources. Today, this experimental farm is extensively visited by producers and researchers worldwide. Jay spent countless hours mentoring farmers around the world on ways to build soil health on their farms. He continues this today as he is in full retirement from his service to the USDA NRCS.

75th Anniversary Conservation Professional of the Year Honorable Mention

In recognition of outstanding accomplishments in practicing and advancing the science and art of natural resource conservation. Additional awards are given in 2020 in honor of SWCS's 75th Anniversary.

Cari Williams

Herb Winters

James Culver

Krista Kirkham

Norm Helzer

Society Service Award

In recognition of Society members for service to their chapter or to the Society.



Hugh Brown

Hugh Brown joined the Society in 1982 and attended his first annual conference in 1985. He has served the Society while

2020 SWCS AWARDS

being a chapter member in five states—Iowa, Vermont, Indiana, Michigan, and currently Washington. As a member and leader he supported learning, mentored students, fostered communications, and provided strong advocacy for the conservation of soil, water, and plant resources. He served as president of the Iowa State University Student Chapter in 1986 to 1987. As president of the student chapter, he, with other members, initiated the construction and sale of groundwater flow models. He served as a member of the Hoosier Council from 1992 to 1995 and coordinated student activities during the annual SWCS conference in Indianapolis. In Michigan he served two terms as chapter president, 2015 and 2018, and past president in 2016 and 2019. During his tenure as chapter president he organized and led a strategic planning effort and the revision and updating of the by-laws. While serving the Michigan Chapter he led an initiative to invest chapter scholarship program assets in a mutual fund, which has returned an average income of 5%. He also chaired the Scholarship Committee and led efforts to publicize and administer the scholarship program.

In his current capacity as a natural resources consultant, Brown works with local governments and private entities to plan and implement landscape stewardship activities. Brown has provided extraordinary leadership and service to chapters in five states. His work at the chapter level has served as a catalyst for development of the next generation of chapter leaders and increased the visibility and relevance of the Society. His service exemplifies the purpose, mission, and goals of SWCS.



Sharon Hartzold

Sharon Hartzold has been a member of SWCS for over 30 years, joining the Society in 1989. She has dedicated her entire professional career to the advancement of natural resource conservation with a 32-year career in NRCS (New York, Iowa, and Illinois).

She has had the role of Soil Conservationist, District Conservationist, and Area Resource Manager within NRCS, and spent a three-week internship in Australia learning and sharing ideas about soil conservation. Her leadership within NRCS has been recognized widely across the state and region.

During her tenure with SWCS, she has served in a variety of leadership positions within the Illinois Land of Lincoln Chapter Chapter of SWCS, including vice president, president-elect, and membership chair. She has served multiple terms in several of these roles. She has also (1) hosted annual state chapter meetings at her home, (2) supported chapter gifts for several SWCS annual conference silent auctions, (3) donated her time at several SWCS annual conferences as a mentor for student-mentor mixes, and (4) served as the Illinois Chapter delegate at the SWCS annual conference several times. Sharon has been an instrumental leader in soil and water conservation, especially in Illinois with her tenure at NRCS and SWCS. She graciously shares her time, knowledge, and expertise to other natural resource professionals, and has been a tremendous asset to the next generation of Illinois SWCS leaders.

Chair's Leadership Award

In recognition of exemplary assistance in helping to carry out the goals and objectives of the Soil and Water Conservation Society.



Clare Lindahl

Clare Lindahl, SWCS CEO, has been a change agent for the Society and conservation awareness during her tenure. She has led efforts for improved outreach with local chapters and provided support for many grassroots efforts. Under her leadership, SWCS has revamped its technology, streamlined

the annual conference, and increased the scope and geographical footprint of grant projects. However, with all of these great accomplishments, it is Lindahl's tireless energy, positive attitude, and true passion for conservation that makes her a joy to follow. SWCS and Chair Rex Martin look forward to her vision for our future prosperity and increasing the practice of the art and science of conservation.

Jeff Strock

For six years Jeff Strock was the liaison of the SWCS–SSSA (Soil Science Society of America) symposium at both societies' annual conferences. Thanks to Strock's efforts, the SWCS–SSSA committee has been able to

2020 SWCS AWARDS



continue this symposium, which brings people together to collaborate, cooperate, and host impactful conversations that in several cases were the basis for special, peer-reviewed journal issues and other key publications. Strock handed over his duties of the chair position this year, but he plans to assist the committee through

the end of 2020 and remains an active SWCS member.



Juan Herrera

Juan Herrera served on the Journal of Soil and Water Conservation Editorial Board as associate editor from

2014 to 2020. He made substantial contributions to improving the Journal in quality and tremendous impacts in the seven years he volunteered with the Journal. During this time, he managed peer review of dozens of manuscripts related to topics of soil quality, nutrient management, cover crops, and more, and he recruited several new reviewers to ensure thorough recommendations to authors. We are pleased to recognize Herrera's excellent service to the Journal with a 2020 Chair's Leadership Award.



Keystone Chapter

The Keystone Chapter was instrumental in hosting the 2019 SWCS Annual Conference in Pittsburgh, Pennsylvania. From

the Regional Forum and Flavor Reception through the Conservation Tours, the chapter provided innovative ideas and unique learning opportunities that showcased the state of Pennsylvania and enhanced participant experiences. Their contribution to the Society and the success of the 2019 International Annual Conference is sincerely appreciated.

Conservation Research Award

In recognition of Society members or teams of members whose research has led to exceptional

improvements in soil conservation, water conservation, and/or related natural resources research.



J. Arbuckle

J. Arbuckle is an extension rural sociologist whose research has had a major impact on our understanding of the human dimensions of soil and water conservation. Arbuckle's research centers on natural resource conservation and the environmental and social sustainability of agriculture. He also serves

as the director of The Iowa Farm and Rural Life Poll (IFRLP), an annual survey of farmers established in 1982. Arbuckle has over 120 research-based publications and was the lead author on the 2018 Journal of Soil and Water Conservation Best Research Paper for Impact and Quality. Arbuckle works closely with key agricultural stakeholders from a broad range of state and federal agencies, nongovernmental groups, and extension faculty and staff to help them better understand the farmers they work with. He has prioritized the establishment of strong, long-term partnerships with these organizations, working to help them improve their conservation policy and programs by enhancing their knowledge of soil and water conservation awareness, attitudes, decision making, and behavior among farmers, landowners, and the general public. These relationships represent critical pathways through which his research and extension programs have influenced positive agri-environmental and social change in the state and nationally.



John Gilley

John Gilley has over 37 years of experience as a research agricultural engineer whose research interests include hydrology, water quality, and soil and water conservation engineering. As a Core Team member of the USDA Water Erosion Prediction Project (WEPP) from its inception in

1985 through 1994, Gilley quantified critical upland hydraulic variables and developed the hydraulics

2020 SWCS AWARDS

model component for WEPP. Gilley's research on land application of manure has identified runoff and erosion benefits, assessed environmental effects of selected land application practices, and determined setback distance requirements for land application areas. Additional research includes measuring conservation benefits of narrow grass hedges, identifying water quality characteristics of runoff from feedlots, identifying mechanisms influencing interrill erosion, and refining dye dilution techniques for measuring hydraulic variables. He has coauthored 106 refereed journal publications, including two Journal of Soil and Water Conservation award-winning research articles, as well as many technical reports and numerous papers presented at national and international meetings. Gilley's research has contributed significantly to an improved understanding of the runoff, erosion, hydraulic, and water quality characteristics of upland areas.



Mark Tomer

For over 37 years, Mark Tomer has made significant contributions to conservation planning research and technology transfer. With 82 peer-reviewed journal articles, including 25 distinctive, senior-authored research papers on watershed assessment

and precision conservation research, Tomer is known for being creative and practical in applying interdisciplinary skills to analysis of watershed-scale data and in developing methods to target and assess conservation practices. His contributions on the science of conservation, through developing siting criteria for conservation practices and analyses of watershed observations, have brought him recognition for leadership in watershed science, both nationally and internationally. Tomer's crowning achievement is the Agricultural Conservation Planning Framework (ACPF), composed of a conceptual framework, watershed databases, and GIS-based planning tools used to optimize placement of conservation practices in watersheds. This iterative and adaptive technology streamlines data use in watershed planning for state agencies, consultants, and nongovernmental organizations. ACPF has over 12,000 HUC-12 watersheds in its database and has inspired multi- and interdisciplinary research conducted nationwide. ACPF

has resulted in millions of private and public investment in conservation practices on agricultural lands. Tomer's creativity, leadership, and excellence in communicating his research has made a significant impact on conservation adoption in the Midwest.

JOURNAL OF SOIL AND WATER CONSERVATION AWARDS

Best Research Paper for Impact and Quality Award

In recognition for the impact and quality of a research paper published in the Journal of Soil and Water Conservation in the previous five years, as well as an Honorable Mention.

Best Research Paper for Impact and Quality Award

Arbuckle, J.G., and G. Roesch-McNally. 2015. Cover crop adoption in Iowa: The role of perceived practice characteristics. Journal of Soil and Water Conservation 70(6):418-429, doi:10.2489/jswc.70.6.418.

Best Research Paper for Impact and Quality Honorable Mention

Lal, R. 2015. Soil carbon sequestration and aggregation by cover cropping. Journal of Soil and Water Conservation 70(6):329-339, doi:10.2489/jswc.70.6.329.

Editor's Choice Award

In recognition of an article of excellence appearing in the "A" Section of the Journal of Soil and Water Conservation in the previous year, as well as an honorable mention.

Editor's Choice Award

Sharpley, A., M.J. Helmers, P. Kleinman, K. King, A. Leytem, and N. Nelson. 2019. Managing crop nutrients to achieve water quality goals. Journal of Soil and Water Conservation 74(5):91A-101A, doi:10.2489/jswc.74.5.91A.

Editor's Choice Honorable Mention

Fleming, P.M., D.J. Merritts, and R.C. Walter 2019. Legacy sediment erosion hot spots: A cost-effective approach for targeting water quality improvements. Journal of Soil and Water Conservation 74(4):67A-73A, doi:10.2489/jswc.74.4.67A.

2020 SWCS AWARDS

Associate Editor Excellence Award

In recognition of associate editors for their contributions to the success and development of the Journal of Soil and Water Conservation.



Daniel Moriasi

Daniel Moriasi joined the Journal of Soil and Water Conservation Editorial Board in 2015. In his five years as editor, Moriasi has shown dedication to the role and has managed more

than 50 reviews. Beyond these assignments, he served on a committee to establish guidelines for data paper submissions and led development of the 2020 special issue, "Measuring and Understanding the Effects of Conservation within Watersheds," a collection of 15 peer-reviewed research articles that document findings of USDA Conservation Effects Assessment Project (CEAP) watershed studies. His efforts make him well-deserving of the Associate Editor Excellence Award.



Gretchen Sassenrath

Gretchen Sassenrath has served as an associate editor for five years and in that time has consistently provided authors with speedy and thorough evaluations of their manuscripts. She has also assisted other editors by providing reviews when requested, showing

exceptional dedication to the Journal and advancement of conservation science. Sassenrath's volunteer service has extended to special Journal committees, most recently as an editor of the forthcoming SWCS 75th Anniversary special collection, *Soil and Water Conservation: A Celebration of 75 Years*. Her many contributions are recognized with the 2020 Associate Editor Excellence Award.

Zeyuan Qiu

Zeyuan Qiu has served as an associate editor since 2011. In this role, he has managed dozens of submissions, enlisting reviewers for feedback and providing authors with timely, high quality reviews. In 2020, Qiu volunteered to co-chair the JSWC committee



to evaluate most-cited papers and select the winner of Best Research Paper for Impact and Quality Award. We are pleased to honor him with the Associate Editor Excellence Award.

CHAPTER AWARDS

Chapter Achievement Award

In recognition of chapters for significant achievements through a single activity conducted during the year.

California Nevada Chapter

Hoosier Chapter

Iowa Chapter

Land of Lincoln Chapter

Montana Chapter

Outstanding Chapter Award

In recognition for the chapter's success in carrying out its overall program during the past year.

Arizona Chapter

California Nevada Chapter

Hoosier Chapter

Iowa Chapter

Michigan Chapter

National Capital Chapter

Nebraska Chapter

North Dakota Chapter

Southern New England Chapter

WIN AWARDS

WiN Conservationist of the Year Award

In recognition of an outstanding woman/farmer/producer/conservationist.



Sara Creech

Sara Creech is owner and operator of Blue Yonder Organic Farm in beautiful central Indiana. Creech founded the farm in 2012 after losing her husband to cancer. During his fight, they researched the role

2020 SWCS AWARDS

of nutrition and how healthy foods can impact human health. What began as a garden project for growing quality healthy produce for her family, has grown into a fully functioning direct-market farm growing grass-fed beef, lamb, and eggs, as well as a variety of fresh fruits, vegetables, herbs, mushrooms, maple syrup, and honey. Creech also offers her products at area Farmers Markets and has established a CSA for locals in the community.

Not only is Creech providing a service to her community with the locally sourced products she raises, but she opens her farm to help new farmers see various farming and conservation practices. Creech is active in several organizations including Women 4 the Land, Indiana Chapter of the Farmer Veteran Coalition and Operation Groundwork. In 2018, she was the first woman voted to serve on her local Soil and Water Conservation District Board. Creech was a featured speaker at the Indiana Forage Council's 2019 Annual Meeting and has been featured in Indiana Prairie Farmer. She is also the 2017 recipient of the Loughmiller Good Steward Award.

WiN Award of Excellence Recipient

In recognition of an individual woman who, over a period of time, has contributed substantially and creatively to our Natural Resources Conservation profession.



Karen Brinkman

Karen Brinkman is the assistant state conservationist for partnerships and initiatives in Missouri.

In the last three years, Brinkman built

Missouri's program and conservation partnerships with: Local SWCD/DNR, MDC, QU/PF, Farm Bureau, MO Cattlemen's, MFA, MO Soybean, MO Corn, MO Rice, University MO Extension Grassland/Soil Health Initiative as well as others.

These partnerships have brought millions of dollars to Missouri for programs, staff, and advancements of partners' programs through NRCS grants while working side by side with NRCS. Through Brinkman's work, the need has been identified and partners have come together and bought into the program and have seen the statewide benefits for their staff and producers

they serve. In addition, NRCS has seen the benefit to producers and the conservation of our natural resources.

Brinkman supported WiN at the local, state, and national level. Several Missouri WiN members were recruited by Brinkman as she knew the benefit the program held in advancement of their career. With Brinkman's influence, Missouri has been able to send staff to these conferences.

Brinkman was a formal as well as an informal mentor to many and an excellent supervisor. She always had an open door to those seeking advice professionally and personally. Brinkman personally exemplified that you do not give up even when things are not going the way you feel they should be either personally or professionally. Her positive attitude had a way of encouraging others.

SWCS RECOGNITION

SWCS Outgoing Board Members

For their dedication as an SWCS Board Member.



Bruce Knight,
At-Large Director



Wendi Goldsmith,
Northeast Regional Director



Don Wysocki,
Northwest Regional Director

SWCS CONFERENCE SITES AND CHAIRS

1946	Chicago, IL, Ralph H. Musser	1984	Oklahoma City, OK, Floyd E. Heft
1947	Omaha, NE, Ralph H. Musser	1985	St. Louis, MO, Roland R. Willis
1948	Cincinnati, OH, T.S. Buie	1986	Winston-Salem, NC, Joe D. Nichols
1949	St. Louis, MO, Lloyd E. Partain	1987	Billings, MT, Maurice G. Cook
1950	Detroit, MI, Firman E. Bear	1988	Columbus, OH, Donald Van Meter
1951	Memphis, TN, Morris E. Fonda	1989	Edmonton, AB, David R. Cressman
1952	Buffalo, NY, Morris E. Fonda	1990	Salt Lake City, UT, Richard Duesterhaus
1953	Colorado Springs, CO, H.H. Bennett	1991	Lexington, KY, Richard Duesterhaus
1954	Jacksonville, FL, R.Y. Bailey	1992	Baltimore, MD, Ronald J. Hicks
1955	Green Lake, WI, Austin L. Patrick	1993	Fort Worth, TX, Ronald J. Hicks
1956	Tulsa, OK, Edward H. Graham	1994	Norfolk, VA, Calvin J. Perkins
1957	Pacific Grove, CA, J.S. Russell	1995	Des Moines, IA, Gary Steinhardt
1958	Asheville, NC, Russell G. Hill	1996	Keystone Resort, CO, John A. Knapp
1959	Rapid City, SD, Alvin C. Watson	1997	Toronto, ON, Aniko Szojka-Parnell
1960	Guelph, ON, Elmer L. Sauer	1998	San Diego, CA, Aniko Szojka-Parnell
1961	Lafayette, IN, Walter C. Gumbel	1999	Biloxi, MS, Dennis Pate
1962	Washington, DC, Roy D. Hockensmith	2000	St. Louis, MO, Dennis Pate
1963	Logan, UT, George M. Browning	2001	Myrtle Beach, SC, Dana Chapman
1964	Jackson, MS, Herbert A. Hopper	2002	Indianapolis, IN, Bob Eddleman
1965	Philadelphia, PA, Minott Silliman, Jr.	2003	Spokane, WA, Myron Senechal
1966	Albuquerque, NM, John R. J. Bradshaw	2004	St. Paul, MN, Deborah Cavanaugh-Grant
1967	Des Moines, IA, Cecil W. Chapman	2005	Rochester, NY, Jean Steiner
1968	Athens, GA, Frank H. Mendell	2006	Keystone, CO, Jean Steiner
1969	Fort Collins, CO, Ray Hunter	2007	Tampa, FL, Theo Dillaha
1970	Toronto, ON, Robert W. Eikleberry	2008	Tucson, AZ, Peggie James
1971	Columbus, OH, Einer L. Roget	2009	Dearborn, MI, Peggie James
1972	Portland, OR, J.R. Johnston	2010	St. Louis, MO, Gary Steinhardt
1973	Hot Springs, AR, A.B. Linford	2011	Washington, DC, Bill Boyer
1974	Syracuse, NY, William L. Vaught	2012	Fort Worth, TX, Bill Boyer
1975	San Antonio, TX, Frank W. Schaller	2013	Reno, NV, Dan Towery
1976	Minneapolis, MN, Chester E. Evans	2014	Chicago, IL, Dan Towery
1977	Richmond, VA, J. Vernon Martin	2015	Greensboro, NC, Mark Berkland
1978	Denver, CO, Arthur D. Latornell	2016	Louisville, KY, Mark Berkland
1979	Ottawa, ON, William Moldenhauer	2017	Madison, WI, Jon Scholl
1980	Dearborn, MI, Gerald R. Calhoun	2018	Albuquerque, NM, Rex Martin
1981	Spokane, WA, Jesse L. Hicks	2019	Pittsburgh, PA, Rex Martin
1982	New Orleans, LA, Robert C. Baum	2020	Virtual Event, Rex Martin
1983	Hartford, CT, Chris J. Johannsen		