



Midwest Cover Crops Council Annual Business Meeting and Cover Crop Conference



March 14–15, 2017

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Welcome to the 2017 Midwest Cover Crops Council Business Meeting and Conference



The Midwest Cover Crops Council (MCCC) and Michigan State University (MSU) are happy to welcome you to the 2017 Annual Midwest Cover Crops Council Business Meeting and Cover Crop Conference. With the interest and growth in cover crops, it's an exciting time for cover crop users, suppliers, researchers, educators and advocates. We graciously thank all of our sponsors for helping make this conference happen. We encourage you to look through the agenda, which offers a detailed overview of the business meeting and conference.

For our MCCC Business Meeting participants, the MCCC Executive Committee welcomes the opportunity to update you on MCCC activities this past year, learn about cover crop efforts around the region, hear from our partners, participate in working sessions and network with cover crop colleagues.

For our MCCC Conference participants, the MSU planning committee has made a concerted effort to invite researchers, educators and farmers from around the region to present their perspectives on *Making Cover Crops Work – Experiences from the Field*.

During the next two days we hope you remain engaged, ask questions and develop the relationships that will help you succeed in your cover crop endeavors. Whether you are a farmer, researcher, educator or agri-business, agency or NGO representative, we thank each of you for attending the 2017 MCCC Business Meeting and Cover Crop Conference.

Sincerely,

MCCC Program Manager
Anna Morrow – Purdue University

MCCC Executive Committee
Dean Baas – MSU Extension
Tom Kaspar – USDA-ARS
Eileen Kladviko – Purdue University
Andrew Lenssen – Iowa State
Anne Verhallen - OMAFRA



Conference Planning Committee
Dean Baas – MSU Extension
Christina Curell – MSU Extension
Paul Gross – MSU Extension
Sarah Hanks – MSU Extension
Erin Hill - MSU
Anna Morrow – Purdue University
Marilyn Thelen – MSU Extension



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2017 Midwest Cover Crops Council Business Meeting



Monday, March 13 – Pre-meeting networking

6:00-8:00pm Attendees arriving on Monday are welcome to join other MCCC participants for refreshments, dinner and conversation at Bagger Dave's, 2817 Kraft Avenue SE. Meet in the lobby at 5:45pm to walk over with the group. If you come in later, please consider joining us at the restaurant.

Tuesday, March 14 – NCCC-211 – Petoskey Room

7:15-8:15am **NCCC-211 Project Meeting** – *NCCC-211 representatives only- Meeting Chair, Andy Lenssen, Iowa State University*

Tuesday, March 14 – MCCC Business Meeting – Huron, Erie & Ontario Rooms

7:30–8:30 Registration

8:30–8:35 **Welcome** – *Dean Baas, Michigan State University Extension*

8:35–8:45 **MCCC Update** – *Anna Morrow, MCCC Program Manager, Purdue University*

8:45–10:15 **State / Province Reports** – *State/Province Representatives (15 minutes each)*
Ohio, South Dakota, Wisconsin, Kansas, Nebraska and Illinois

10:15–10:30 **Break / Poster Session** – Atrium

10:30–12:15 **State / Province Reports** – *State/Province Representatives (15 minutes each)*
Michigan, North Dakota, Minnesota, Iowa, Ontario, Indiana and Missouri

12:15–1:30 **Lunch / Poster Session**

1:30–2:40 **Working Session Breakouts** – Select a breakout to attend from:

- **MCCC Decision Tools** – *Leader: Dean Baas, MSUE*
 - Mobile friendly / NRCS seeding tool / Other tools
- **MCCC Website** – *Leaders: Anna Morrow, Purdue and Erin Hill, MSU*
 - Discuss recent update / next steps
- **Future Extension Products** – *Leaders: Eileen Kladviko, Purdue & Anne Verhallen, OMAFRA*
 - Discuss future Products / Videos / Publications / Etc.
- **Others** – Small groups are encouraged to form and discuss other topics of their choice relevant to the MCCC

2:40–3:00 **Working Session Reports** – *A representative from each session will give a brief report from the session discussion*

3:00–3:15 **Break/Poster Session** – Atrium

2017 Midwest Cover Crops Council Business Meeting



Tuesday, March 14 – MCCC Business Meeting – Huron, Erie & Ontario Rooms

3:15–4:15

Partnership Reports

- Conservation Technology Information Center – *Chad Watts (10-15min)*
- Practical Farmers of Iowa – *Sarah Carlson (10-15min)*
- National Wildlife Federation – *Ryan Stockwell (10-15min)*
- SARE and Partnership for Soil Health – *Rob Myers (10-15min)*
- Northeast Cover Crops Council – *Steven Mirsky (5-7min)*
- Southern Cover Crops Council – *Erin Haramoto (5-7min)*

4:15

Business Meeting Adjourns

Tuesday, March 14 – MCCC Board Meeting – Huron, Erie & Ontario Rooms

4:30–5:30

MCCC Board of Directors Meeting – *Board Members Only*

The Board of Directors meet to discuss MCCC business

Tuesday, March 14 – Post-Meeting Networking

6:00-8:00pm

Attendees are welcome to join other MCCC participants for refreshments, dinner and conversation at Brann's Steakhouse and Grille, 5510 28th St SE. Meet in the lobby at 5:45pm to walk over with the group.

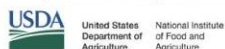


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Continuing Education

CCA CEU Instructions:

Credits are available for crop management, nutrient management and/or integrated pest management depending on the sessions attended. Sign-up sheets will be available at each session, ask to sign-up.

RUP CEU Instructions:

5 restricted use pesticide credits are available for attending the entire conference. Private (Core) and Commercial (Core, 1A, 1B & 1D). Sign-up will be available at the registration table during the afternoon break.



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Tuesday, March 14 – Pre-conference Networking

6:00-8:00pm Attendees arriving on Tuesday evening are welcome to join other MCCC participants for refreshments, dinner and conversation at Brann's Steakhouse and Grille, 5510 28th St SE. Meet in the lobby at 5:45pm to walk over with the group. If you come in later, please consider joining us at the restaurant.

Wednesday, March 14 – MCCC Cover Crops Conference

7:30–8:30am Registration / Vendor Time / Poster Session

Morning Joint Session – Grand Centennial Ballroom

8:30–8:45 **Welcome Remarks** – *Ron Bates, Director of the Michigan State University Extension Agriculture and Agribusiness Institute*

8:45–9:45 **Keynote: Cover Crop Termination: Considerations when selecting herbicides and the potential for resistance** – *Dale Shaner, Retired USDA-ARS—University of Colorado*
CCA CEUs: 1.0 Integrated Pest Management

Morning Break – Atrium

9:45–10:00 **Break / Vendor Time**
Break will served in the Atrium. Network and visit our vendor exhibits.

Morning Concurrent Sessions

Field Crops – Grand Centennial Ballroom

Moderator – *James DeDecker, Michigan State University Extension*

10:00–10:45 **Challenges and successes of no-till and cover crops in Southern Illinois**
Nathan Johanning – University of Illinois Extension
Adam Dahmer –Farmer, Williamson County, Illinois
CCA CEUs: 0.5 Crop Management

10:45–11:30 **Use of cover crops for weed suppression in field crops in Kansas**
Anita Dille – Kansas State University
Josh Lloyd – Farmer, Central Kansas
CCA CEUs: 0.5 Integrated Pest Management

11:30–12:15 **Interactions between cover crops and nematodes in diverse MI field crops systems**
George Bird – Michigan State University
Fred Warner – Michigan State University
Mark Sylvester – Farmer, Fairgrove Michigan
CCA CEUs: 0.5 Integrated Pest Management

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Vegetable Crops – Saugatuck and Traverse City Rooms

Moderator – *Marissa Schuh, Michigan State University Extension*

- 10:00–10:45** **I can't believe it's not butternut on plastic! Year two rye cover and fertility observations**
Ben Phillips – Michigan State University Extension
Mike Yancho Jr. – Forgotten Harvest Farm
CCA CEUs: 0.5 Nutrient Management
- 10:45–11:30** **Cover crops and conservation tillage systems in organic broccoli, peppers and squash**
Ajay Nair – Iowa State University
Wade Dooley – Farmer, Albion, Iowa
CCA CEUs: 0.5 Crop Management
- 11:30–12:15** **Long-term cover cropping in conventional vegetable systems. Can you improve soil health while still tilling?**
Laura Van Eerd – University of Guelph, Ridgetown Campus, Ridgetown, Ontario
CCA CEUs: 0.5 Crop Management

Forage/Grazing – Cheboygan and Harbor Springs Rooms

Moderator – *Phil Kaatz, Michigan State University Extension*

- 10:00–10:45** **Lessons from over 10 years of grazing cover crops in beef production**
Mike Buis – Cattle Rancher and Farmer, Chatham, Ontario
CCA CEUs: 0.5 Crop Management
- 10:45–11:30** **Cover crops & forage-finished beef: A 3-year study of forage quality and cattle performance**
Jason Rowntree – Michigan State University Extension
Jon Nelson – Cattle Rancher, Northern Michigan
CCA CEUs: 0.5 Crop Management
- 11:30–12:15** **Winter rye cover crop and forage comparison in Wisconsin – five year results: economics and farmer perspectives**
Kevin Shelley – University of Wisconsin
Brandon Gibson – Farmer, Central Michigan
CCA CEUs: 0.5 Crop Management

Lunch – Atrium and Grand Centennial Ballroom

- 12:15–1:15** **Lunch / Vendor Time / Poster Session**
A buffet lunch will be served in the Atrium with seating in the Ballroom. There is ample time to network, visit our vendor exhibits and browse through the posters.

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Afternoon Concurrent Sessions

Field Crops – Grand Centennial Ballroom

Moderator – Ashley McFarland, Michigan State University Extension

1:15–2:00 **Partnerships and Information Infrastructure: How Indiana moved from 184,000 acres of cover crops to 1.1 million acres in 5 years**

Lisa Holscher – Conservation Cropping Systems Initiative in Indiana (CCSI)

Jamie Scott – Farmer and Seed Dealer, Pierceton, Indiana

CCA CEUs: 0.5 Crop Management

2:00–2:45 **Cover crops versus good rotation**

Bill Deen – University of Guelph and Farmer, Guelph, Ontario

CCA CEUs: 0.5 Crop Management

Vegetable Crops – Saugatuck and Traverse City Rooms

Moderator – Zach Hayden, Michigan State University

1:15–2:00 **Our experiences with cover crops and no-till vegetable production in southern Illinois**

Nathan Johannig – University of Illinois Extension

CCA CEUs: 0.5 Crop Management

2:00–2:45 **Mustard family cover crops for crop establishment and pest management in vegetables**

Dan Brainard – Michigan State University

Ben Werling – Michigan State University Extension

Ralph Oomen – Farmer, Hart, Michigan

CCA CEUs: 0.5 Integrated Pest Management

Forage/Grazing – Cheboygan and Harbor Springs Rooms

Moderator – Brook Wilke, Michigan State University Kellogg Biological Station

1:15–2:00 **Grazing cover crops and small ruminants**

Richard Ehrhardt – Michigan State University and Farmer

CCA CEUs: 0.5 Crop Management

2:00–2:45 **Grazing multi-species cover crops with beef cattle – the Michigan experience**

Gerry Lindquist – Michigan State University Extension

Chris Harrington – Cow/calf operation, Paris, Michigan

CCA CEUs: 0.5 Crop Management

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Afternoon Break and Poster Session – Atrium

2:45–3:30

Break / Poster Session / Vendor Time

Break will be served in the Atrium. Visit the posters and talk to poster authors. Also, visit our vendor exhibits.

Afternoon Joint Session – Grand Centennial Ballroom

3:30–4:30

Interseeding Cover Crops into Field Crops Systems: Geography makes a Difference

Karen Renner – Michigan State University

Aaron Brooker – Michigan State University

Marisol Berti – North Dakota State University

Douglas Toussaint – Farmer, Wahpeton, North Dakota

Mark Hasenick – Farmer, Southern Michigan

CCA CEUs: 1.0 Crop Management

4:30–4:45

Conference Wrap-up and Closing Remarks – Dean Baas, Michigan State University Extension



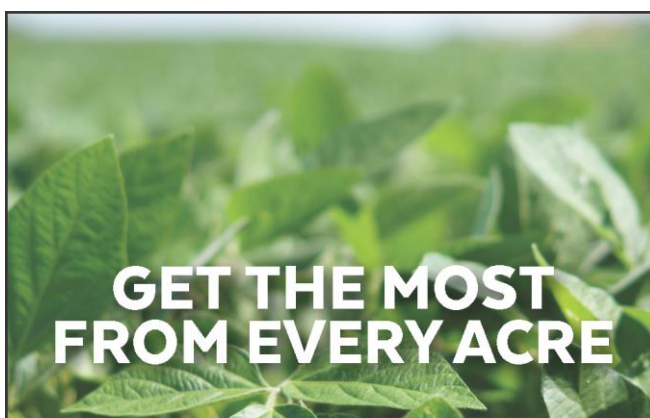
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Presentation Descriptions

Joint Sessions – Grand Centennial Ballroom

Keynote: Cover Crop Termination: Considerations when selecting herbicides and the potential for resistance – Dale Shaner, Retired USDA-ARS—University of Colorado

In this presentation, Dale will discuss the efficacy of different classes of herbicides on cover crops, both in terminating the crop with herbicides as well as potential carryover of the herbicides from previous crops and to the production crop. He will discuss the mode of action of the major classes of herbicides used, how that mode of action affects efficacy and environmental responses and the potential for selecting for resistance.

CCA CEUs: 1.0 IPM

Interseeding Cover Crops into Field Crops Systems: Geography makes a Difference – Karen Renner – Michigan State University; Aaron Brooker – Michigan State University; Marisol Berti – North Dakota State University; Douglas Toussaint – Farmer, Wahpeton, North Dakota; and Mark Hasenick – Farmer, Southern Michigan

Time constraints limit the opportunity to seed cover crops in the fall in Michigan following corn harvest. Interseeding cover crops into corn during the early vegetative growth stages of corn may suppress weeds and increase cover crop biomass and soil health benefits. In our research, we are evaluating the establishment and competitiveness of annual ryegrass, crimson clover, and Tillage Radish® interseeded into corn from V1-V7, and the effects of interseeded cover crops on weed suppression and soil health. This presentation will also include the new research information from North Dakota on cover crops interseeding, differences in cover crops species, and methods and dates of planting in both corn and soybean. Farmer perspectives from Douglas Toussaint's and Mark Hasenick's experiences on cover crop intercropping will be included.

CCA CEUs: 1.0 Crop Management

Field Crops – Grand Centennial Ballroom

Challenges and successes of no-till and cover crops in Southern Illinois – Nathan Johanning – University of Illinois Extension and Adam Dahmer – Farmer, Williamson County, Illinois

Cover crops and no-till production are integral tools in managing the poorly drained, clay soils of southern Illinois. However, finding the right cover crop and production techniques to maximize this system can be a challenge some seasons. Hear how a local farmer is making this system work in his operation.

CCA CEUs: 0.5 Crop Management

Use of cover crops for weed suppression in field crops in Kansas – Anita Dille – Kansas State University and Josh Lloyd – Farmer, Central Kansas

Cover crops provide many benefits, and weed suppression is one that many Kansas' farmers want to include as another benefit in their cropping system. Recent requests for information resulted in this collaboration between Josh Lloyd, farmer in central Kansas, and Anita Dille, weed scientist at Kansas State University. We will share the on-farm study that was initiated by the No-till On The Plains organization, and co-sponsored by the KS Soybean Commission, to explore if cover crops suppress weeds before no-till planting soybean in Kansas. In general, 50% fewer weeds and nearly 97% reduction in weed biomass were observed in 2016. Josh will share his production experiences that include cover crops for weed suppression.

CCA CEUs: 0.5 Integrated Pest Management

Interactions between cover crops and nematodes in diverse MI field crops systems – George Bird – Michigan State University; Fred Warner – Michigan State University; and Mark Sylvester – Farmer, Fairgrove Michigan

Mark Sylvester, Fred Warner and George Bird will have an interactive discussion about cover crops in Michigan farming systems. Mark will describe how cover crops are used on the Sylvester Farm in Fairgrove, Michigan. Fred will present some of his cover crop research results related to nematode management. George will provide general information about the use of cover crops in regards to cultivar selection, management, blends and current cover crop labels.

CCA CEUs: 0.5 Integrated Pest Management

Partnerships and Information Infrastructure: How Indiana moved from 184,000 acres of cover crops to 1.1 million acres in 5 years – Lisa Holscher – Conservation Cropping Systems Initiative in Indiana (CCSI) and Jamie Scott – Farmer and Seed Dealer, Pierceton, Indiana

Through support of wide-ranging partnerships that include the Conservation Cropping Systems Initiative, Indiana moved from 184,000 acres of cover crops to 1.1 million acres in just five years: The systematic approach, the partnerships that permeate all levels of engagement, developing support systems, and understanding social sciences and marketing strategies will be discussed.

CCA CEUs: 0.5 Crop Management

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Presentation Descriptions

Field Crops – Grand Centennial Ballroom

Cover crops versus good rotation – *Bill Deen – University of Guelph and Farmer, Guelph, Ontario*

Enthusiasm for cover crops is a wonderful thing BUT has this enthusiasm reduced the focus on other beneficial agronomic practices? The corn soybean rotation that dominates the landscape of the Northern Corn Belt is increasingly associated with environmental and production concerns. While cover crops may alleviate some of these concerns, the preferred solution is diversification of the rotation with a third crop such as winter wheat. Economic incentives are emerging that could alter grower perception that a corn soybean rotation maximizes profit.

CCA CEUs: 0.5 Crop Management

Vegetable Crops – Saugatuck and Traverse City Rooms

I can't believe it's not butternut on plastic! Year two rye cover and fertility observations – *Ben Phillips – Michigan State University Extension and Mike Yancho Jr. – Forgotten Harvest Farm*

Our project was developed to provide information to guide decisions that growers face as they transition from plasticulture to rye mulch-grown winter squashes. For two years we grew butternut squash under no-till, strip-till, bare ground, and on plastic beds. In year one, we tested two irrigation treatments. In year two, we tested three fertility treatments.

CCA CEUs: 0.5 Nutrient Management

Cover crops and conservation tillage systems in organic broccoli, peppers and squash – *Ajay Nair – Iowa State University and Wade Dooley – Farmer, Albion, Iowa*

The presentation will focus on strip-tillage and its application in cucurbit cropping system. The presentation will showcase organic methods of cover crop termination in strip-tillage systems using a roller crimper. Results from an on-farm NCR SARE funded study on winter squash production will also be highlighted.

CCA CEUs: 0.5 Crop Management

Long-term cover cropping in conventional vegetable systems. Can you improve soil health while still tilling? – *Laura Van Eerd – University of Guelph, Ridgetown Campus, Ridgetown, Ontario*

Two long-term cover crops were established in 2007/08 where the same cover crop was grown year after year in a vegetable production system on a good sandy loam soil (3.5% OM). In addition to vegetable crop yield, quality and profit margins, initial research focused on N cycling (fall losses + carry over to next crop) but recent research looks at impact of cover cropping on soil health (commercially available test and academic measures).

CCA CEUs: 0.5 Crop Management

Our experiences with cover crops and no-till vegetable production in southern Illinois – *Nathan Johanning – University of Illinois Extension*

The hills of southern Illinois have a rich history of fruit and vegetable production. Hear how a local grower developed a no-till/cover crop system to fit his wholesale vegetable operation, maximizing productivity, while preserving and enriching his soils.

CCA CEUs: 0.5 Crop Management

Mustard family cover crops for crop establishment and pest management in vegetables – *Dan Brainard – Michigan State University; Ben Werling – Michigan State University Extension; and Ralph Oomen – Farmer, Hart, Michigan*

We will discuss grower experience and research with cover crops in vegetable crops, including impacts on nitrogen, weeds, nematodes and yields of carrots, asparagus and snap beans. We will emphasize cover crops in the mustard family (e.g. oilseed radish and yellow mustard) and discuss best management practices for maximizing their bio-fumigation potential.

CCA CEUs: 0.5 Integrated Pest Management

2017 Midwest Cover Crops Council Conference



Presentation Descriptions

Forage/Grazing – Cheboygan and Harbor Springs Rooms

Lessons from over 10 years of grazing cover crops in beef production – Mike Buis – Cattle Rancher and Farmer, Chatham, Ontario

Mike Buis is cattle rancher and farmer from Chatham, Ontario. He has developed a practical and sustainable system of growing and grazing cover crops that allows him to raise beef cattle on some of the most valuable vegetable and cash crop land in Canada. He will cover some of his successes and failures over the last ten years of getting this system to work.

CCA CEUs: 0.5 Crop Management

Cover crops & forage-finished beef: A 3-year study of forage quality and cattle performance – Jason Rowntree – Michigan State University Extension and Jon Nelson – Cattle Rancher, Northern Michigan

A 3-year grazing trial conducted at MSU on grass-fed beef grazing a diverse cover crop mixture during a 70 day finishing period. Jon has been using cover crops as a forage source for finishing beef for at least 3 years now. Jon has gone from 10-15 head of cattle, and a cash crop farm in 2011, to over 150 head to date, and has completely transitioned to hay and grazing. He and his family produce well over 100 head of grass finished beef that is direct marketed off their farm, as well as sold to a couple of wholesale outlets in Michigan.

CCA CEUs: 0.5 Crop Management

Winter rye cover crop and forage comparison in Wisconsin – five year results: economics and farmer perspectives – Kevin Shelley – University of Wisconsin and Brandon Gibson – Farmer, Central Michigan

This five-year trial at the UW Arlington Research Station addresses the potential for soil erosion and nutrient losses following corn harvested as silage. Within a continuous corn silage rotation, the trial compares the effects of fall-planted winter rye as a spring-terminated cover crop and as a spring-harvested forage crop, on corn silage yields, soil nitrogen levels and nitrogen application requirements. A partial budget economic analysis has also been prepared based on costs associated with planting rye, harvesting rye forage and determining the value of all forages produced according to yields and feed quality parameters using the Milk Per-ton of Dry Matter index. A series of focus group interviews with dairy farmers and their nutrition and crop consultants is a planned next step.

CCA CEUs: 0.5 Crop Management

Grazing cover crops and small ruminants – Richard Ehrhardt – Michigan State University and Farmer

Annual forage crops when planted as a cover crop or when used as part of a pasture rotation offer opportunities to improve whole farm utilization and reduce the cost of production in livestock systems. This talk will describe how annual crops have been used in a prolific sheep production system to improve forage utilization and to improve animal health and performance.

CCA CEUs: 0.5 Crop Management

Grazing multi-species cover crops with beef cattle – the Michigan experience – Gerry Lindquist – Michigan State University Extension and Chris Harrington – Cow/calf operation, Paris, Michigan

Grazing multi species annual cover crops with livestock is being touted as a way to reduce feed costs and to improve soil productivity. Learn what Michigan beef farms working with Michigan State University Extension staff have learned about the practice in Michigan.

CCA CEUs: 0.5 Crop Management

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Speaker and Moderator Biographies

Ronald Bates – Ronald Bates – Ron Bates is the Director of the MSU Extension Agriculture and Agribusiness Institute. He is also a professor in the MSU Animal Science Department where he focused on swine genetics and management. He has worked closely with the MSU Extension educators to provide leadership on educational programs relating to genetic programs for commercial and seedstock producers, as well as the transition to housing sows in groups. As Director of the Agriculture and Agribusiness Institute, Ron provides leadership and works with the 65 outstate Extension staff that serves Michigan agriculture. In addition he works with campus administration regarding the over 80 campus faculty and staff that contribute to the agriculture extension mission. Dr. Bates has a B.S. from Delaware Valley College of Science and Agriculture, an M.S. and a Ph.D. from Oklahoma State University.

Marisol Berti – Dr. Marisol Berti joined the Department of Plant Sciences, North Dakota State University (NDSU), as an associate professor in forage and biomass crop production in July 2009. She was promoted to professor with tenure in 2016 and she continues working at NDSU. She has a B.S. degree in Agronomy from the Catholic University in Chile, and a M.S. and Ph.D. degree in Plant Sciences from NDSU. Her research experience includes forages, cover crops, and bioenergy crops production research. She is author of 56 peer-reviewed publications, 19 proceeding papers, 3 book chapters and 117 conference and symposia presentations. She is board member and has served as chair/president in several scientific organizations such as the Association for the Advancement of Industrial Crops (AAIC), C6- Forage and Grazinglands Division of the Crop Science Society of America, Midwest Cover Crop Council, and Midwest Forage Association. She is also editor-in-chief of the Industrial Crops and Products Journal and serves as reviewer for many other journals.

George Bird – After being a Research Scientist for Agriculture Canada and a faculty member at the University of Georgia, George came to Michigan State University in 1973. He received his B.S. and M.S. from Rutgers University and the Ph.D. from Cornell University. George teaches and does research and outreach in the areas of nematology, pest management, soil health and cover crops. He also served as the first national Director of the Sustainable Agriculture Research and Education Program, known as SARE.

Dan Brainard – Dan Brainard is an Associate Professor in the Department of Horticulture at Michigan State University. He received his MS from Stanford University in Economics and a PhD from Cornell University in Horticulture with an emphasis on weed ecology and management in vegetable crops. Prior to graduate school he worked on commercial vegetable farms in the Northeast U.S., and served as an agricultural extension educator for the U.S. Peace Corps in Mali, West Africa. His current primary research and extension interests include 1) development of reduced-tillage cover crop intensive vegetable production systems to help growers improve soils and increase crop resilience to stress, and 2) weed ecology and integrated weed management in vegetables, with an emphasis on cultural and mechanical approaches.

Mike Buis – Mike is a third generation cattle rancher from Chatham Ontario. The family raises cattle to supply their on farm retail store and several speciality markets with farm raised local beef. Their cropland produces speciality crops of sweetcorn, seed corn and seed beans as well as a number of commercial cash crops. Farm tours, demonstration sites and speaking engagements allow Mike to share his strategic use of cover crops following intensive field crop production that make cattle farming sustainable on this premium farmland.

Adam Dahmer – Adam Dahmer is the 6th generation farming with his family in Williamson County in southern Illinois. Their grain farm has been 100% no-till since 1983 and they started using cover crops around 1999. They have tried a wide variety of cover crop species and also pioneered using a high-clearance seeder for interseeding cover crops into standing crops in the region.

James DeDecker – James DeDecker is an Agriculture Educator with Michigan State University Extension, based in Presque Isle County and responsible for field crop outreach across eleven counties in Northeast Lower Michigan. Since joining MSU Extension in 2012, he has drawn on his background in crop production, integrated pest management and the human dimensions of natural systems to serve Michigan producers and agribusiness through partnership building, on-farm research and educational programming.

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Speaker and Moderator Biographies

Bill Deen – Bill Deen is an Associate Professor in the Department of Plant Agriculture, University of Guelph. Bill received a M.S. (1991) in agricultural economics and a Ph.D. (1999) in plant agriculture from the University of Guelph. Bill is an agroecologist involved in applied research who does extensive outreach to growers and industry. The objective of his research program is to develop agroecosystems that are both productive and sustainable. Bill has internationally recognized knowledge of crop rotation, cover crop, tillage and field-based research techniques and experience managing interdisciplinary research efforts based on long-term field trials. In his spare time Bill manages a broiler farm in North Wellington County.

Anita Dille – Anita Dille is a Professor of Weed Ecology in the Agronomy Dept. She has a 50% teaching and 50% research appointment, with a focus on understanding weed biology and ecology in Kansas cropping systems and evaluating integrated weed management programs. Anita grew up on a cash crop farm in southern Ontario, received her Ph.D. in Agronomy at University of Nebraska-Lincoln, and has been at K-State since 2000. Anita and her husband, Russell, both work in Agronomy and stay busy with gardening and watching their son play high school basketball.

Wade Dooley – Wade Dooley is a 6th generation farmer and owns and operates the Glenwood Century Farm in Albion, Iowa. The farm is located along the Iowa River and raises cattle, row-crops, and vegetable crops. The farm has a long history of selling food and other products directly to the consumer. The farm incorporates several sustainable production practices such as cover cropping, crop rotation, and reduced tillage for enhanced sustainability of their production system.

Richard Ehrhardt – Richard Ehrhardt has been the small ruminant specialist at Michigan State University since 2009 holding a joint appointment between the departments of animal science and large animal clinical sciences. He received his M.S. and Ph.D. (1997) from Cornell University and then pursued further specialized training in molecular endocrinology and metabolic regulation all centered on understanding the mechanisms that regulate nutrient use especially during pregnancy. His interest in outreach and applied research were fostered by his experiences managing his own flock of commercial ewes on an accelerated lambing program for the past 18 years, shearing professionally since his early teens, raising purebred sheep through his college years and doing field research in New Zealand and Australia. His applied research and outreach interests revolve around increasing production efficiency in small ruminants through strategic nutritional management, optimizing aseasoneal reproduction, improving whole-farm forage utilization and by establishing preventative health programs.

Brandon Gibson – Brandon is the crop manager for Hillhaven Farms in McBride, Michigan. Hillhaven Farms has made many improvements while transitioning from a 150-cow dairy to its current herd of 870 cows and 720 youngstock. Hillhaven's herd currently has a DHI rolling herd average of 26,623 pounds of milk. In 2004, the farm completed its first Comprehensive Nutrient Management Plan (CNMP), though they have been testing and applying manure nutrients according to crop uptake since 1986. This has greatly reduced commercial fertilizer usage on the farm. Hillhaven is currently working with MSU researchers to develop new technologies to conserve natural resources and protect their land.

Chris Harrington – Chris Harrington operates a 75 cow/calf beef operation with his family in Paris, Michigan. Utilizing sound animal husbandry practices along with soil conservation measures on a variety of soil types he strives to keep all input costs including purchased feeds low by blending annual forage crops into his hay and pasture rotations.

Mark Hasenick – Hasenick Farms LLC, is a 4000 acre no-till farming operation in southern Michigan. Hasenick Farms grows corn, soybeans, and wheat in rotation. The farm's philosophy is to keep living roots in farm fields throughout the year; cover crops are planted in all fields at various 'windows of opportunity'. Hasenick Farms has built their own cover crop seeder and conduct their own on-farm experiments on cover crop species mixtures, seeding timing, and seeding rates. They are collaborators in our on-farm research on interseeding cover crops in corn in the early vegetative growth stages.

Zachary Hayden – Dr. Zachary (Zack) Hayden is an assistant professor and extension specialist in the Department of Horticulture at Michigan State University. His research and outreach program focuses on nutrient and soil health management for vegetable cropping systems, with the goal of improving grower success while limiting environmental impacts. Areas of interest include efficient nutrient and water management, cover cropping, residue mineralization, fertility and crop quality interactions, and organic production systems.

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Speaker and Moderator Biographies

Lisa Holscher – Lisa Holscher is the Director of the Conservation Cropping Systems Initiative in Indiana (CCSI). A collaboration of the Indiana Conservation Partnership, Commodity Organizations, NGOs, farmers, and other ag professionals, CCSI's focus is to increase the understanding and adoption of Soil Health practices and systems in Indiana. This amazing collaboration, along with phenomenal adoption of practices such as cover crops has led Indiana to be held up as an example of "how to get conservation on the ground".

Nathan Johanning – Nathan Johanning is a Local Food Systems & Small Farms Educator for the University of Illinois Extension serving Franklin, Jackson, Perry, Randolph, and Williamson Counties in southern Illinois. Nathan has a diverse background in both agronomic and horticultural crop production from his education and research experiences along with his work personally on his family farm with grain crops and also pumpkins. He focuses much of his current Extension research and programming around cover crops and soil conservation in the region.

Phil Kaatz – Phil Kaatz, MSU Extension Educator for forages and field crops, has been with MSUE since 1999. Kaatz's educational role includes working with all forage crops with emphasis in alfalfa and corn silage management. Some of his recent programming efforts include sulfur management in alfalfa, alfalfa/grass winterhardiness & heaving trials, nitrogen management in corn hybrids for both silage and grain, and using compost in a corn and soybean rotation.

Jerry Lindquist – Jerry Lindquist has served as a Michigan State University Extension agricultural educator for 34 years based in Osceola County. His expertise is in all aspect of forage management for beef and dairy cattle. He along with his family raise beef cattle, goats and horses on the family farm.

Josh Lloyd – Josh Lloyd farms in North Central Kansas which receives an average of 31 inches of rainfall. He has been in a continuous no-till system since 1998 with his main crops being winter wheat, grain sorghum, corn, and soybeans. He recently added cows and hair sheep which also led to the addition of a perennial break in his cropping rotation. Josh has a degree in business from Kansas State University. He and his wife Tammy have 3 children.

Ashley McFarland – Ashley McFarland is the Director of the MSU Upper Peninsula Research and Extension Center, which focuses on integrated livestock and cropping systems, soil health, and local food systems. Ashley is also a Community Food System Educator within MSU Extension, focusing primarily on malting barley for the local craft beer industry. Ashley holds an M.S. from Iowa State University in Environmental Science and Water Resources and a B.A. from Central College in Political Science and Environmental Studies.

Ajay Nair – Dr. Ajay Nair is an Assistant Professor working in the area of Sustainable Vegetable Production in the Department of Horticulture at Iowa State University. The focus of his research, extension, and teaching program is on cover cropping, conservation tillage, nutrient management, soil amendments and health, and season extension strategies in vegetable production. He also has an interest in local food production and works on production aspects and techniques needed to meet the rising demand of locally grown produce. He has a doctoral degree from Michigan State University and Masters from University of Maine.

Jon Nelson – Jon Nelson has gone from 10-15 head of cattle, and a cash crop farm in 2011, to over 150 head to date, and has completely transitioned to hay and grazing. He and his family produce well over 100 head of grass finished beef that is direct marketed off their farm, as well as sold to a couple of wholesale outlets in Michigan. Jon spoke at the 2015 Grass Fed Exchange hosted in Michigan.

Ralph Oomen – Ralph Oomen farms with his family in the Hart, MI area at Oomen Bros. They grow diverse vegetables including asparagus, carrots, zucchini as well as field crops. Oomen Bros has hosted numerous on-farm trials with Michigan State University, including multiple years of cover crop trials. The farm has experimented with cover crops including oilseed radish, mustard, oats, black oats, wheat, and cereal rye.

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Speaker and Moderator Biographies

Ben Phillips – Ben Phillips has a B.S. in Fisheries and Wildlife Management from Michigan State University and an M.S. in Entomology from The Ohio State University. Through MSU Extension, he started work in 2013 with commercial vegetable growers who target the fresh, wholesale and processing markets in the Bay and Thumb areas of Michigan. His primary duties entail crop scouting, pest identification, crop management consultation, resource development, educational programming and facilitating small and large-scale research projects with MSU's main faculty researchers and regional collaborations. Ben also meets with growers one-on-one to understand industry trends and develop strategies to maintain a sustainable and competitive vegetable production system in Michigan.

Karen Renner – Dr. Karen Renner is a Professor in Plant, Soil and Microbial Sciences at Michigan State University. Dr. Renner, Dr. Sprague, Dr. Tiemann, and Aaron Brooker, Ph.D. student, are determining the effects of cover crops interseeded in corn on soil health, weed suppression, and corn production. The research group has expertise in integrated cropping systems, including weed management and soil ecosystem services.

Jason Rowntree – Jason Rowntree is an Associate Professor in Animal Science at Michigan State University focusing on grass-finishing of beef, livestock grazing influence on ecosystem services and carbon footprint. He is faculty coordinator of Lake City Research Center a 810 ac facility that maintains 300 AU of registered and commercial Red Angus cattle and also supports bioenergy and potato research. Lake City is also the first university based farm to collaborate with the Savory Institute as a global farm hub for holistic management. Dr. Rowntree is also an accredited educator in Holistic Management specializing in developing land-based decisions that improve the triple bottom line of agriculture. While at MSU, Jason has accrued over \$2,000,000 in state and federal funding as lead or co-investigator and has been the invited speaker at multiple national and international grazing and environmental conferences. Jason is Chairman of the board of the Grassfed Exchange, the leading educational outreach of the USA grass-fed industry and is an advisor for Standard Soil, a newly formed B-Corporation whose goal is to supply the nation's growing demand for grass finished beef at commercial scale.

Jamie Scott – Jamie Scott is internationally known for his cover crop expertise. Through Scott's Cover Crops, Jamie coordinates aerial seeding of over 100,000 acres of cover crops in Michigan and Indiana. His expertise as a farmer and a cover crop proponent has helped guide of the Conservation Cropping Systems Initiative in Indiana (CCSI) efforts to advance adoption of soil health systems in Indiana.

Marissa Schuh – Marissa Schuh is a commercial vegetable production educator covering multiple counties in southeast Michigan. Through Michigan State University Extension, she works with commercial vegetable producers, regardless of size or target market, to develop and maintain production strategies that are profitable and sustainable. She meets one-on-one with producers to perform pest and disease scouting and identification, as well as provides consultation on production concerns. She also reports on timely emergent issues, creates educational resources, and organizes programming. She has a B.A. from Luther College (Decorah, IA) in Biology and English, and an M.S. in Entomology from Michigan State University.

Dale Shaner – Dale Shaner was reared on a farm in west central Illinois. He received a B.S. in botany from DePauw University in 1970, an M.S. in plant ecology from the University of Colorado, Boulder in 1972, and a Ph.D. in plant physiology from the University of Illinois, Urbana in 1976. Dale began his weed science research when he was an assistant professor of weed science at the University of California, Riverside from 1976-1979. After leaving Riverside, he managed research in herbicides and agricultural biotechnology at the Agricultural Research Center in Princeton, N.J., for American Cyanamid and then for BASF from 1979-2001. He was instrumental in discovering the mode of action of the imidazolinones and in developing imidazolinone-resistant crops. In 2001 Dr. Shaner joined the Water Management Unit of USDA-ARS in Fort Collins, CO where he conducts research on weed management under deficit irrigation. He helped establish the intercompany Herbicide Resistance Action Committee and was the chairman of HRAC from 1998-2001. Dale has been active in herbicide resistance management for ALS inhibitors (imidazolinones, sulfonylureas, etc.) and glyphosate. He was a member of WSSA Board of Directors for eight years and President of WSSA in 2006-2007. Dale was the recipient of the WSSA Outstanding Industry Award in 1993, was elected Fellow of WSSA in 2000 and was awarded the WSSA Outstanding Research Award in 2013. Dale retired from USDA-ARS in February, 2013 and is now a private consultant working with the agrichemical industry.

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Speaker and Moderator Biographies

Kevin Shelley – Kevin is an Outreach Program Manager with the University of Wisconsin Nutrient and Pest Management Program. He works with farmers, agribusinesses and public agencies to provide educational programs in managing soil fertility and crop pest management for achieving farm profitability and environmental protection. Topics emphasize farm nutrient management planning, integrated crop management, use of cover crops and production methods for certified organic crops. Kevin holds a B.S. in Agricultural Economics, UW College of Agricultural and Life Sciences (84) and a M.S. in Land Resources, UW Nelson Institute for Environmental Studies (91). He is a Certified Crop Advisor (CCA) through the American Society of Agronomy. Kevin lives with his family on a sixth-generation farm near Deerfield, Wisconsin.

Mark Sylvester – Mark is cash crop grower in Fairgrove, Michigan. Sylvester Farms raises seven crops, including sugar beets, corn, soybeans, dry beans, pickles, alfalfa and oil seed radish. He farm was a U.S. pioneer in the successful use of specific cultivars of oil seed radish for management of *Heterodera schachtii* (sugar beet cyst nematode).

Douglas Toussaint – Doug Toussaint is from Wahpeton, ND in the Red River Valley. He grows many grain crops, soybean, barley, sunflower, corn, wheat, rye, teff, and others. He started to convert his operation to no-till and cover crops systems about 3 years ago. Two wet springs in a row in heavy clay soils was what convinced him to change systems. Nothing worked in those soils and they stayed wet all season, like pudding. They started with 160 acres of cover crops in 2014 now the whole farm is in cover crops and no-till. They plant cereal rye in all the acres that will follow with soybean and plant soybeans on green rye. They aerially seed cover crops mixes into standing corn and plant cover crops mixes after any cereal. They have started to do interseeding of cover crops in sunflowers and other crops. Now with a green cover in the spring they can plant even in wet springs.

Fred Warner – Fred is a Nematologist within Diagnostic Services at MSU. He spends the majority of his time at the microscope identifying and counting microscopic roundworms. In addition, he assists clients/growers in management of plant-parasitic nematode problems. Fred has served in this capacity for over 30 years. He received his B.S. and M.S. degrees from Michigan State University majoring in Entomology. If you detect an unusual accent when he speaks, it's due to the fact he was born and raised in Massachusetts and will probably never lose the accent completely. He lives with his wife, a dog and a cat in Dimondale, MI.

Brook Wilke – Dr. Brook Wilke earned a Ph.D. in Agroecology at the MSU Kellogg Biological Station in 2010 and continues to serve KBS in the role of Farm Manager (2013-present). Brook oversees farm operations for the Kellogg Farm and Pasture Dairy Center, and organizes cropping system and livestock research. In addition to growing up on a family scale crop and livestock farm, Dr. Wilke has extensive experience in agricultural systems ranging from organic vegetables and local markets to pasture based livestock, including educational activities related to these systems.

Ben Werling – Ben Werling is an Extension Educator in West Michigan, where he has served commercial vegetable producers since 2013. The area he serves produces a diverse variety of vegetables, including asparagus, carrots, celery, onions, winter and summer squash, snap beans, cole crops, peppers, parsnips, beets and turnips. Growers in this region use cover crops for many purposes, including providing windbreaks for vegetable seedlings, preventing soil erosion, and providing organic matter and Nitrogen to soils. Ben became interested in vegetable production in graduate school as he studied pest management in onions and potatoes while pursuing his M.S. at Cornell and his PhD at the University of Wisconsin.

Mike Yancho, Jr. – Mike Yancho runs the Forgotten Harvest farm. It is a 92 acre non-profit farm that grows dry beans, sweet corn, kale, collards, broccoli, cabbage, zucchini, yellow summer squash, and butternut squash to directly supply food banks in metro Detroit.

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The goal of the Midwest Cover Crops Council (MCCC) is to facilitate widespread adoption of cover crops throughout the Midwest, to improve ecological, economic, and social sustainability.

The MCCC is a diverse group from:

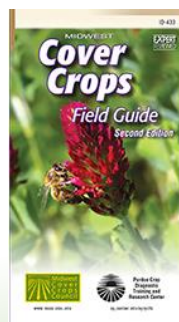
- Academia
- Production Agriculture
- NGOs
- Commodity Interests
- Private sector
- Representatives from federal, state and provincial agencies



The MCCC collaborates to address soil, water, air, and agricultural quality concerns in the Great Lakes and Mississippi river basins.

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Midwest Cover Crop Field Guide available from:
www.the-education-store.com