



**The Hyatt Place, Champaign, IL
September 29 – October 1, 2015**

Objective: The Midwest Climate and Agriculture Workshop will create a unique opportunity to convene producers, consultants, product developers, and researchers concerned about climate extremes and variability impacts on **specialty crops** and **livestock** throughout the Midwest.

Goals:

- Discover the types of climate and weather information and tools needed to address concerns of specialty crop and livestock communities across the Midwest.
- Develop an understanding of the types of climate and weather information and tools available in the Midwest and how this could be applied to decision making.
- Identify climate impacts on specialty crop and livestock producers for the Midwest.

Tuesday, September 29th: Afternoon Sessions (1-5pm)		
Session 1: Introductions to Midwest Climate Partners and Workshop Goals		
Session 1 Goals: <ul style="list-style-type: none"> • Highlight the overall goals of the workshop • Communicate why NOAA, USDA, MRCC, and NIDIS are co-hosting • Learn what the participants are hoping to get out of the meeting 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
1:00 PM	Beth Hall MRCC Director, Univ. of Illinois	Welcome & Introductions
1:15 PM	Doug Kluck Central Region Climate Services Director, NOAA	Overview and Goals of NOAA Central Region Climate Services
1:25 PM	Jerry Hatfield Midwest Climate Hub Leader, USDA	Overview and Goals of USDA Climate Hubs
1:35 PM	Beth Hall MRCC Director, Univ. of Illinois	Overview and Goals of the MRCC
1:45 PM	Courtney Black Regional Drought Info. Coordinator, NIDIS	Overview of NIDIS and the Drought Early Warning System (DEWS)

1:55 PM	Group Discussion Facilitator: Doug Kluck	Discussion Questions <ul style="list-style-type: none"> • How could this workshop be of value to your climate and agriculture role with respect to specialty crops and livestock? • What discussion topics are you hoping the workshop will address (either currently on the agenda or needs to be added)?
2:30 PM	Break	Refreshments & Snacks (Room C)
Session 2: State of the Climate in the Midwest Session 2 Goals: <ul style="list-style-type: none"> • Identify current state of climate, particularly climate extremes and variability • Identify specialty crops and livestock risks with climate extremes 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
2:50 PM	Pat Guinan MO State Climatologist/Extension, Univ. of Missouri	Extreme Heat: Climate Summary, Trends, and Variability – Possible Impacts and Consideration to Specialty Crops and Livestock
3:05 PM	Jeff Andresen MI State Climatologist, Michigan State Univ.	Extreme Cold: Climate Summary, Trends, and Variability – Possible Impacts and Consideration to Specialty Crops and Livestock
3:20 PM	Jim Angel IL State Climatologist, ISWS-Univ. of Illinois	Precipitation: Climate Summary, Trends, and Variability – Possible Impacts and Consideration to Specialty Crops and Livestock
3:35 PM	Mark Svoboda Climate Based Monitoring Program Area Leader, NDMC	Drought: Climate Summary, Trends, and Variability – Possible Impacts and Consideration to Specialty Crops and Livestock
3:50 PM	Ray Wolf Science and Operations Officer, NOAA NWS-Davenport	Climate Summary, Trends, and Variability from an NWS Perspective – Possible Impacts and Consideration to Specialty Crops and Livestock
4:05 PM	Group Discussion Facilitator: Beth Hall	Discussion Questions <ul style="list-style-type: none"> • Have the key climate topics been covered? Which haven't? Which need further discussion and awareness? • Which climate topic is most important for specialty crops? Livestock?
4:40 PM	Beth Hall MRCC Director, Univ. of Illinois	Day 1 Wrap-Up

Wednesday, September 30 th : Morning Sessions (8:30 AM – 12 PM)		
Session 3: Climate Impacts on Resources in the Midwest		
Session 3 Goals: <ul style="list-style-type: none"> Identify how climate has recently affected major Midwest resources that specialty crops and livestock depend upon (i.e. soil, water) Identify current and future concerns/risks for these important Midwest resources 		
Time	Presenter	Topic
8:30 AM	Jerry Hatfield Midwest Climate Hub Leader, USDA	Summary of Yesterday & Overview of Today
8:40 AM	Mike Wilson Nat'l Climate Change Leader, NRCS	NRCS Conservation Practices Related to Soil Health and their Impact on Soil Resilience
8:55 AM	Matt Ruark Soil Science Assoc. Professor, Univ. of Wisconsin	Water Quality
9:10 AM	Doug Yeskis IL Water Science Center Director, USGS	Water Quantity
9:25 AM	Group Discussion Facilitator: Jerry Hatfield	Discussion Questions: <ul style="list-style-type: none"> Are there other important resources to specialty crops and livestock that need to be considered in terms of climate impacts? Are there any other issues that need to be noted? What sort of monitoring of these resources can be done to become more resilient to the impacts from extremes?
10:00 AM	Break	Refreshments & Snacks (Room C)
Session 4: Climate Impacts and Stressors on Livestock and Specialty Crops		
Session 4 Goals: <ul style="list-style-type: none"> Identify examples of impacts due to extreme events (heat, cold, flooding, drought) Identify if other atmospheric parameters have an impact (e.g., wind, dew point, evapotranspiration) Identify if climate variability has an impact (year-to-year variability) 		
Time	Presenter	Topic
10:20 AM	Wenjing Guan Clinical/Engagement Asst. Prof., Purdue University	Specialty Crops
10:40 AM	Jay Solomon Extension Educator, Univ. of Illinois Extension	Livestock and Production Systems
11:00 AM	Matt Grieshop Entomology Assoc. Prof./Extension, Michigan State Univ.	Climate Change and Pest Management

11:20 AM	Group Discussion Facilitator: Beth Hall	Discussion Questions <ul style="list-style-type: none"> For specialty crops, what climate impact/stressors are most/least important? For livestock, what climate impact/stressors are most/least important?
11:55 AM	Beth Hall MRCC Director, Univ. of Illinois	Morning Sessions Wrap-Up/Lunch Instructions
12:00 PM	Lunch	Served in Room C

Wednesday, September 30th: Afternoon Sessions (1 – 4:45 PM)		
Session 5, Part 1: Climate Monitoring Tools		
Session 5 Goals: <ul style="list-style-type: none"> Identify climate monitoring tools designed for regional monitoring Identify climate monitoring tools based upon state/local mesonet data Identify climate monitoring tools for specific climate extremes Identify climate monitoring tools specifically for specialty crops and livestock 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
1:00 PM	Beth Hall MRCC Director, Univ. of Illinois	Midwestern Regional Climate Center Tools
1:20 PM	Pat Guinan MO State Climatologist/Extension, Univ. of Missouri	Missouri Ag Climate/Mesonet Tools
1:40 PM	Jeff Andresen MI State Climatologist, Michigan State Univ.	EnviroWx Tools
2:00 PM	Matt Dixon Agricultural Meteorologist, University of Kentucky	Kentucky Mesonet Tools
2:20 PM	Break	Refreshments & Snacks (Room C)

Session 5, Part 2: Climate Monitoring Tools		
Session 5 Goals: <ul style="list-style-type: none"> Identify climate monitoring tools designed for regional monitoring Identify climate monitoring tools based upon state/local mesonet data Identify climate monitoring tools for specific extremes and sectors Identify climate monitoring tools specifically for specialty crops and livestock 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
2:40 PM	Mark Svoboda Climate Based Monitoring Program Area Leader, NDMC	National Drought Mitigation Center Tools and Drought Monitor
3:00 PM	Melissa Widhalm U2U Project Manager, Purdue Univ.	Useful 2 Usable (U2U) Decision Support Tools
3:20 PM	BJ Baule Climate Research Association, GLISA	Great Lakes Potential Evapotranspiration Climatology & GLISA Applications
3:40 PM	Steve Buan Service Coordination Hydrologist, NWS-North Central RFC	Agricultural Runoff Risk Forecast at the NCRFC
4:00 PM	Group Discussion Facilitator: Beth Hall	Discussion Questions <ul style="list-style-type: none"> When are tools more appropriate regionally versus locally? What variables are lacking when it comes to climate monitoring? How would improved monitoring help reduce vulnerabilities?
4:40 PM	Doug Kluck Central Region Climate Services Director, NOAA	Day 2 Wrap-Up

Thursday, October 1 st : Morning Sessions (8:30 AM – 12PM)		
Session 6: Climate Prediction, Outlooks, and Uncertainty		
Session 6 Goals: <ul style="list-style-type: none"> Understand the current state of climate short-term outlooks and long-range projections/models that are available Are climate outlooks and projections a reliable resource for resiliency in specialty agriculture? Identify timing, spatial extent, and other uncertainties with projected climate extremes 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
8:30 AM	Doug Kluck Central Region Climate Services Director, NOAA	Summary of Yesterday & Overview of the Final Day

8:35 AM	Olivia Kellner MRCC Climatologist, ISWS-Univ. of Illinois		Climate Prediction Center Monthly and Seasonal Outlooks
8:55 AM	Jim Angel IL State Climatologist, ISWS-Univ. of Illinois		National Climate Assessment
9:20 AM	Momcilo Markus Hydrologist, ISWS-Univ. of Illinois		Future Hydroclimatology Uncertainty
9:45 AM	Group Discussion Facilitator: Doug Kluck		Discussion Questions <ul style="list-style-type: none">• Are any of these resources being used by the livestock and specialty crop sectors currently?• What is the overall impression of climate projections?• Is uncertainty being conveyed sufficiently?• What types of projects (temporal, spatial) are needed?• What are the challenges of making these tools? Lack of observations? Too much uncertainty?
10:20 AM	Break		Refreshments & Snacks (Outside Meeting Rooms)
Session 7: Sector Break-Out Groups, Climate Tools and Resource Needs			
Session 7 Goals: <ul style="list-style-type: none">• Identify key climate/weather parameters needing tools• Identify temporal and spatial scale needs			
<u>Time</u>	<u>Break-Out Sessions</u>		<u>Discussion Questions</u>
10:40 AM – 12:00 PM	Specialty Crops Facilitator: Beth Hall	Livestock Facilitator: Jerry Hatfield	<ul style="list-style-type: none">• What are some tools needed to address temperature extremes?• What are some tools needed to address precipitation extremes and associated issues (e.g., erosion, no-till impacts)?• What are some tools needed to address climate variability (year-to-year variability)?• What is there a greater need for – monitoring or prediction tools? Why? At what time scales?
12:00 PM	Lunch		Served in the Upstairs Lobby

Thursday, October 1 st : Afternoon Sessions (1 – 3 PM)		
Session 8: Climate Tools and Resource Planning Session 8 Goals: <ul style="list-style-type: none"> • Summarize the sector break-out groups • Discuss climate tool and resource needs as a larger group (prioritize) • Discuss how we increase participation from livestock and specialty crop sectors • Identify the best ways to deliver new tools to livestock and specialty crop sectors 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
1:00 PM	Beth Hall MRCC Director, Univ. of Illinois	Climate Tools and Resource Needs – Specialty Crop Break-Out Group Summary
1:10 PM	Jerry Hatfield Midwest Climate Hub Leader, USDA	Climate Tools and Resource Needs – Livestock Break-Out Group Summary
1:20 PM	Group Discussion Facilitator: Beth Hall	Discussion Questions <ul style="list-style-type: none"> • What are the main challenges for developers and users of decision-support tools? • How should a list of needed tools/resources be prioritized? • How do we get a greater participation from the livestock and specialty crop sectors? • What are the best ways to deliver these tools and/or information to the livestock and specialty crop sectors?
2:00 PM	Break	Refreshments & Snacks (Outside Meeting Rooms)
Session 9: Workshop Wrap-Up Session Session 9 Goals: <ul style="list-style-type: none"> • Where do we go from here as a group? 		
<u>Time</u>	<u>Presenter</u>	<u>Topic</u>
2:15 PM	Group Discussion Facilitator: Doug Kluck	Discussion Questions: <ul style="list-style-type: none"> • Where do we go from here as a group? • Are there other workshops or conferences that may be helpful in the future? • Any other last thoughts?
2:40 PM	Courtney Black Regional Drought Information Coordinator, NIDIS	Drought Early Warning System (DEWS) Survey & Feedback
3:00 PM	Workshop Concludes	Thanks for Joining Us, Safe Travels!