

WSSA

**2025 Annual Meeting
February 24-27, 2025
Vancouver, Canada**

SWSS

**2025 Annual Meeting
January 20-23, 2025
Charleston, SC**

WEED SCIENCE SOCIETY OF AMERICA - SOUTHERN WEED SCIENCE SOCIETY JOINT MEETING

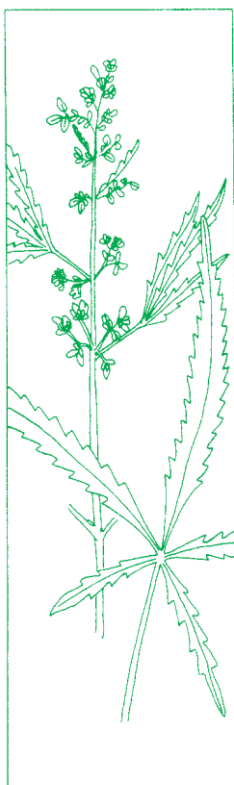
64th Meeting

2024 MEETING PROGRAM

Hyatt Regency Riverwalk

San Antonio, TX

January 22, 2024 – January 25, 2024



WSSA Sustaining Members

PRESIDENTIAL

BASF Corporation
Bayer Crop Science
Corteva Agrisciences
FMC Corporation
Syngenta Crop Protection
Harpe Bioherbicide

LEADERS

Gowan
UPL NA Inc
ENVU
Valent USA
Winfield United
Helena Agri-Enterprises

PATRONS

Gylling Data Management
Nufarm Americas Inc
Nichino America Inc.
Lehigh Agri & Bio Services, Inc.
Blue River Technology
Precision Laboratories

CONTRIBUTORS

AMVAC Chemical Corp
Greenleaf Technologies
ABG Ag Services
TeeJet Technologies
Nippon Soda Ltd
TKI Novasource
Clariant Corporation
R & D Sprayers
SePRO

SWSS Sustaining Members

Gold

BASF Corporation

Bayer CropScience

Corteva Agriscience

FMC

Syngenta Crop Protection

Bronze

ADAMA

AMVAC Chemical Corp.

BASF Seed and Traits

Bellspray, Inc.

Blue River Technology

Diligence Technologies

Greenleaf Technologies

K-I Chemical U.S.A. Inc.

Nichino America

Nutrien

PBI Gordon

TeeJet Technologies - Spraying Systems Co.

The Scotts Company

UPL NA, Inc.

Valent USA Corp

Winfield United

**64th Meeting
Weed Science Society of America/
Southern Weed Science Society**

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WSSA Sustaining Members	Inside Front Cover
SWSS Sustaining Members	Inside Back Cover

Local Arrangements Committee 2024 – San Antonio
Co-Chairs Gary Schwarzlose and Luke Ethridge

The WSSA/SWSS 2024 Program

Welcome to the 2024 joint Weed Science Society of America (WSSA) and Southern Weed Science Society (SWSS) annual meeting as we meet in-person at the Hyatt Regency San Antonio in San Antonio Texas. The hotel is conveniently located near the Alamo and the Riverwalk is right outside the back door of the hotel. There are many great restaurants, shops, and things to see and do while you are in San Antonio. Our program includes a few significant changes so please read carefully as your arrival and departure date may vary slightly from past events. The general session and WSSA/SWSS Awards Ceremony will begin at 4 pm Monday Jan. 22, 2023. Wyman Meinzer, State Photographer of Texas will be our Keynote Speaker and his presentation is titled: "Evolution of a Photographer and Author." Presidents Carroll Mosely (WSSA) and Eric Castner (SWSS) will collaborate on the presidential address followed by the presentation of our annual awards. A joint reception will follow to celebrate our award winners. As always, our meeting is focused heavily on our students. Please plan to join us for the Quiz Bowl on Tuesday Evening at 5:00-7:00 pm. Peter Dotray will host this event. It will be entertaining, fun, and informative. The Quiz Bowl is one of the great events put on by the SWSS. This event is open to everyone so come and check it out. Following tradition, the poster session will occur Tuesday and Wednesday mornings along with concurrent breakout sessions providing scientific data of interest for everyone from Tuesday morning through Thursday at lunch. Any student who is a WSSA/SWSS member and has registered to attend the current annual meeting is eligible to compete in the poster or oral presentation contest. WSSA will not be hosting a 15-minute oral presentation contest but will offer the -Single Slide Talk (SST) competition to all WSSA and SWSS students, while SWSS will offer SWSS students the opportunity to participate in a 15-minute oral presentation contest. These competitions provide students with the opportunity to profile their research and enhance their communication skills. The Women in Weed Science Networking Event is scheduled for Monday afternoon from 2:00 – 3:30 pm. Four symposiums will occur from Tuesday through Thursday including the following: "Pesticide Registration, Current Standards and Regulations for the Assessment of Environmental Impacts of Pesticide Use in the United States" organized by Zahoor Ganie and the WSSA Environmental Aspects Committee, "New Approaches to Herbicide and Bioherbicide Discovery" organized by Stephen Duke and Franck Dayan,

representing the Physiology, Biocontrol of Weeds, and Weed Biology committee, “Adjuvants Matter: How New Technology and a Changing Marketplace are Creating New Opportunities for Inquiry and Advancement” organized by Matt Faletti and the WSSA Formulations, Adjuvants and Application Technology Committee, and” Herbicide Resistant Weeds: Identification, Documentation and Regulation” organized by Craig Alford and the WSSA U. S. HRAC Herbicide Resistance Management Committee. Special thanks to our local arrangement chairs, Gary Schwarzlose and Luke Etheredge, and the local arrangements committee, the WSSA executive secretary, Eric Gustafson, and the SWSS business manager Kelley Apodaca for keeping both the WSSA and SWSS program chairs on course and organizing numerous events and Section Chairs are certainly going to make our meeting a great success.

Gregory Dahl, WSSA Program Chair and President-Elect
Todd Baughman, SWSS Program Chair and President-Elect

2024 Program Committee WSSA/ SWSS

General Program Chair.....	Gregory Dahl and Todd Baughman
Vice Chair.....	Hilary Sandler and Eric Palmer
Agronomic Crops.....	Craig Alford and Connor Webster
Horticultural Crops.....	Thierry Besancon and Gregory Stele
Turf and Ornamentals.....	Mayank Malik and Shawn Askew
Pastures, Rangelands.....	Byron Sleugh and David Clabo
Forests, Rights of Way, Wildlands and Aquatic Invasive Plants	
Regulatory Aspects.....	Cameron Douglass and Kayla Eason
Teaching and Extension.....	Debalin Sarangi and Liberty Galvin
Formulation, Adjuvant, & Application Technology	Gourav Harma and Scott Nolte
Weed Biology and Ecology.....	Shilpa Singh and Swati Shrestha
BioControl of Weeds.....	Rin Ragamaihi and Aniruddha
Physiology.....	Chad Brabham and Tommy Butts
Soil and Environmental Aspects..	Kyle Russel and Matt Inman
Integrated Weed..... Management	Ramawater Yadav and Matt Wiggins
Targeted and Autonomous Weed Control Technologies	Nathan Boyd and Luis Avila
Sustaining Member Exhibits.....	Kyle Kepner and Nicholas Basinger
Poster Sessions.....	Tom Mueller and Michael Lovelace
Student Contest.....	Marty Schraer and Pratap Devkota
Student Travel Enrichment Experience/ Science Policy Fellow Update.....	Pamela Carvalho-Moore and Mason Castner

Program Booklet and Abstracts

Please also download the meeting app for the most up to date schedules and information.

Posters and Sustaining Member Exhibits

All posters and Sustaining Member Exhibits will be on display from Tuesday at 7am to Thursday at 11am. The times will not be replicated daily throughout the program.

Professional Photographs

Complimentary photograph station will be open throughout the week in the Directors room at 10:00 AM and 3:00 PM starting Tuesday. Thursday will be 10:00 AM only. Check the registration desk for more information and Monday hours.

CONDENSED PROGRAM

SUNDAY JANUARY 21

WSSA Board of Directors Meeting	7:00 AM - 9:00 PM	Live Oak
Natural Bridge Caverns Tour	9:00 AM - 12:00 PM	Tour Depart from Lobby
Blue River Technologies Meeting	9:00 AM - 1:00 PM	Pecan
WSSA Board of Directors Meeting	1:00 PM - 5:00 PM	Live Oak
SWSS Board of Directors Meeting	3:30 PM - 5:30 PM	Pecan
Top Golf Graduate Student Mixer	6:00 PM - 9:00 PM	Meet in Lobby

MONDAY JANUARY 22

WSSA Board of Directors Meeting	7:00 AM - 9:00 AM	Live Oak
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GROW Meeting	8:00 AM - 12:30 PM	Blanco
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SWSS Board of Directors Meeting	9:00 AM - 10:00 AM	Pecan
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San Antonio Botanical Garden Tour	9:00 AM - 12:00 PM	Depart from Lobby
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US-HRAC	9:00 AM - 11:30 AM	Nueces
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Blue River Technologies Meeting	9:30 AM - 1:30 PM	Llano
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SWSS Business Meeting	10:00 AM - 11:00 AM	Regency FGH
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WSSA/SWSS Joint Student Meeting and Luncheon	11:00 AM - 1:00 PM	Regency DE
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WSSA Science Policy Committee Meeting	12:00 PM – 2:00 PM	Live Oak
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Registration	1:00 PM – 4:00 PM	Los Rios Foyer
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Publications Committee Meeting	1:00 PM – 2:00 PM	Pecan
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IWSS Board of Directors Meeting	1:00 PM – 4:00 PM	Pecos
Women in Weed Science	2:00 PM – 3:30 PM	Regency DE
General Session	4:00 PM – 7:15 PM	Regency EFGH
WSSA/SWSS Welcome and Awards Reception	7:15 PM – 9:00 PM	Rio Grande Ballroom

TUESDAY JANUARY 23

Student Contest Judges Breakfast	6:00 AM – 7:00 AM	Rio Ballroom
Sprayer Technology Meeting	6:00 AM – 7:00 AM	Pecos
Registration	7:00 AM – 4:00 PM	Los Rios Foyer
Overcoming Hurdles in Graduate School	7:00 AM – 8:00 AM	Live Oak
IWGC Meeting	7:00 AM – 8:00 AM	Llano
WSSA Finance Committee Meeting	7:00 AM – 9:00 AM	Directors
POSTER – WSSA/SWSS poster	7:00 AM – 9:00 AM	Regency ABCD

POSTER – 01. Agronomic Crops	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 02. Horticultural Crops	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 03. Turf and Ornamentals	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 04. Pasture, Range, Forest, & Rights of Ways, Wildland, and Aquatic Invasive Plants	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 05. Regulatory Aspects	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 06. Teaching and Extension	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 07. Formulation, Adjuvant, & Application Technology	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 08. Weed Biology and Ecology	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 09. Biocontrol of Weeds	7:00 AM – 9:00 AM	Regency ABCD

POSTER – 10. Physiology	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 11. Soil and Environmental Aspects	7:00 AM – 9:00 AM	Regency ABCD
POSTER – 12. Integrated Weed Management	7:00 AM – 9:00 PM	Regency ABCD
POSTER – 17. Targeted and Autonomous Weed Control Technologies	7:00 AM – 9:00 AM	Regency ABCD
Judges Workroom	8:00 AM – 5:00 PM	Mesquite
ORAL – WSSA SST	9:00 AM – 12:00 PM	Regency G
ORAL – SWSS Student Contest MS 1 & PhD 1	9:00 AM – 2:45 PM	Nueces
ORAL – SWSS 15-minute oral MS 2 & PhD 2	9:00 AM – 2:45 AM	Frio
ORAL – SWSS 15- Minute oral MS 3, PhD 3, & PhD 4	9:00 AM – 5:00 PM	Blanco
ORAL – 01. Agronomic Crops	9:00 AM – 4:45 PM	Regency F
ORAL – 08. Weed Biology and Ecology	9:00 AM – 4:00 PM	Regency H

SYMPOSIUM – Pesticide Registration, Current Standards and Regulations for the Assessment of Environmental Impacts of Pesticide Use in the United States	1:00 PM – 5:00 PM	Regency G
ORAL – 09. Biocontrol of Weeds	4:00 PM - 4:30 PM	Regency H
IWGC Meeting	5:00 PM - 6:00 PM	LLano
Student Quiz Bowl/Mixer	5:00 PM - 7:00 PM	Rio Grande Ballroom

WEDNESDAY JANUARY 24

Christian Fellowship Breakfast	6:30 AM - 8:00 AM	Live Oak
President's Breakfast	6:30 AM - 8:00 AM	Pecan
Registration	7:00 AM – 4:00 PM	Los Rios Foyer
SYMPOSIUM - New Approaches to Herbicide and	9:00 AM - 1:00 PM	Rio Grande Ballroom

Bioherbicide
Discovery

ORAL - 01. Agronomic Crops	9:00 AM - 11:00 AM	Regency F
ORAL - 05. Regulatory Aspects	9:00 AM - 10:45 AM	Regency H
ORAL - 12. Integrated Weed Management	9:00 AM - 2:45 PM	Regency G
ORAL - 07. Formulation, Adjuvant, & Application Technology	10:45 AM - 12:00 PM	Regency H
ORAL - 06. Teaching and Extension	11:00 AM - 12:00 PM	Regency F
SYMPOSIUM - Adjuvants Matter: How New Technology and a Changing Marketplace are Creating New Opportunities	1:00 PM - 5:00 PM	Rio Grande Ballroom
ORAL - WSSA SST - Finals	1:00 PM - 2:00 PM	Regency H
ORAL - 03. Turf and Ornamentals	1:00 PM - 3:00 PM	Regency F

ORAL - 13. Student Travel Enrichment Experience/ Science Policy Fellow Update	2:30 PM - 5:00 PM	Regency H
ORAL - 11. Soil and Environmental Aspects	3:15 PM - 5:15 PM	Regency F
WSSA/SWSS Joint Student and Photo Awards	5:30 PM - 7:30 PM	Regency E
Iron Cactus Tequila Tasting Tour	5:30 PM - 7:30 PM	Meet in Lobby
BASF Sponsored Reception	7:30 PM - 9:30 PM	Rio Grande Ballroom

THURSDAY JANUARY 25

WSSA Business Breakfast	6:30 AM - 8:00 AM	Live Oak
SYMPOSIUM - Herbicide Resistant Weeds: Identification, Documentation, and Regulation	8:00 AM - 12:00 PM	Rio Grande W/C
ORAL – 17. Targeted and Autonomous Weed Control Technologies	8:30 AM – 12:00 PM	Regency H

ORAL – 02. Horticultural Crops	8:45 AM – 12:00 PM	Regency F
ORAL – 04. Pasture, Range, Forest, & Rights of Ways, Wildland, and Aquatic Invasive Plants	9:00 AM – 12:00 PM	Rio Grande East
ORAL – 10. Physiology	9:00 AM – 12:00 PM	Regency G
SWSS Board of Directors Meeting	1:00 PM – 2:00 PM	Live Oak
WSSA Board of Directors Meeting	2:00 PM – 3:00 PM	Live Oak

PROGRAM

SUNDAY MORNING JANUARY 21

WSSA Board of Directors Meeting

LOCATION: Live Oak
TIME: 7:00 AM – 9:00 AM Central
Time
MODERATOR: Carroll Moseley
Syngenta
Brown Summit, NC
CO-MODERATOR: Gregory K. Dahl
Winfield United – Retired
Eagan, MN

SUNDAY MORNING JANUARY 21

Natural Bridge Caverns Tour

LOCATION: Depart from Lobby
TIME: 9:00 AM – 12:00 PM Central
Time

SUNDAY MORNING JANUARY 21

Blue River Technologies Meeting

LOCATION: Pecan
TIME: 9:00 AM – 1:30 PM Central
Time
MODERATOR: Lauren M. Lazaro
Blue River Technology
Sunnyvale, CA

SUNDAY AFTERNOON JANUARY 21

WSSA Board of Directors Meeting

LOCATION: Live Oak
TIME: 1:00 PM – 5:00 PM Central
Time
MODERATOR: Carroll Moseley
Syngenta
Brown Summit, NC
CO-MODERATOR: Gregory K. Dahl
Winfield United – Retired
Eagan, MN

SUNDAY AFTERNOON JANUARY 21

SWSS Board of Directors Meeting

LOCATION: Pecan
TIME: 3:30 PM – 5:30 PM Central
Time
MODERATOR: Eric P. Castner
FMC
Pauls Valley, OK
CO-MODERATOR: Todd A. Baughman
Oklahoma State University
Ardmore, OK

SUNDAY AFTERNOON JANUARY 21

Top Golf Graduate Student Mixer

LOCATION: Meet in Lobby
TIME: 6:00 PM – 9:00 PM Central
Time

***SPEAKER**

MONDAY MORNING JANUARY 22

WSSA Board of Directors Meeting

LOCATION: Live Oak
TIME: 7:00 AM – 9:00 AM Central
Time
MODERATOR: Carroll Moseley
Syngenta
Brown Summit, NC
CO-MODERATOR: Gregory K. Dahl
Winfield United – Retired
Eagan, MN

MONDAY MORNING JANUARY 22

GROW Meeting

LOCATION: Blanco
TIME: 8:00 AM – 12:30 PM Central
Time
CO-MODERATOR: Michael L. Flessner
Virginia Tech
Blacksburg, VA

MONDAY MORNING JANUARY 22

SWSS Board of Directors Meeting

LOCATION: Pecan
TIME: 9:00 AM – 10:00 AM Central
Time
MODERATOR: Eric P. Castner
FMC
Pauls Valley, OK
CO-MODERATOR: Todd A. Baughman
Oklahoma State University
Ardmore, OK

MONDAY MORNING JANUARY 22

San Antonio Botanical Garden Tour

LOCATION: Depart from Lobby
TIME: 9:00 AM – 12:00 PM Central
Time

MONDAY MORNING JANUARY 22

US-HRAC

LOCATION: Nueces
TIME: 9:00 AM – 11:30 AM Central
Time
MODERATOR: Craig M. Alford
Corteva
Ankeny, IA

MONDAY MORNING JANUARY 22

Blue River Technologies Meeting

LOCATION: Llano
TIME: 9:30 AM – 1:30 PM Central
Time
MODERATOR: Lauren M. Lazaro
Blue River Technology
Sunnyvale, CA

MONDAY MORNING JANUARY 22

SWSS Business Meeting

LOCATION: Regency F
TIME: 10:00 AM – 11:00 AM Central
Time
MODERATOR: Eric P. Castner
FMC
Pauls Valley, OK
CO-MODERATOR: Todd A. Baughman
Oklahoma State University
Ardmore, OK

MONDAY MORNING JANUARY 22

**WSSA/SWSS Joint Student Meeting and
Luncheon**

LOCATION: Regency DE
TIME: 11:00 AM – 1:00 PM Central
Time
MODERATOR: Pamela Carvalho-Moore
University of Arkansas
Fayetteville, AR
CO-MODERATOR: Mason Castner
University of Arkansas
Fayetteville, AR

MONDAY AFTERNOON JANUARY 22

WSSA Science Policy Committee Meeting

LOCATION: Live Oak
TIME: 12:00 PM – 2:00 PM Central
Time
MODERATOR: Lee Van Wychen
WSSA
Alexandria, VA

MONDAY AFTERNOON JANUARY 22

Publications Committee Meeting

LOCATION: Pecan
TIME: 1:00 PM – 2:00 PM Central
Time
MODERATOR: Christian Willenborg
University of Saskatchewan
Saskatoon, SK, Canada

MONDAY AFTERNOON JANUARY 22

IWSS Board of Directors Meeting

LOCATION: Pecos
TIME: 1:00 PM – 4:00 PM Central
Time
MODERATOR: Samunder Singh
MICADA, Haryana, India
HISAR, India

MONDAY AFTERNOON JANUARY 22

Women in Weed Science

LOCATION: Regency DE
TIME: 2:00 PM – 3:30 PM Central
Time

MONDAY AFTERNOON JANUARY 22

General Session

LOCATION: Regency EFGH

TIME: 4:00 PM – 7:15 PM Central Time

CHAIR: Gregory K. Dahl
Winfield United
Eagan, MN

MODERATOR: Gregory K. Dahl
Winfield United – Retired
Eagan, MN

CO-MODERATOR: Todd A. Baughman
Oklahoma State University
Ardmore, OK

***SPEAKER**

- 04:00 PM Welcome to the 2024 WSSA/SWSS Joint Annual Meeting.** Gregory K. Dahl*¹, Todd A. Baughman²;
¹Winfield United – Retired, Eagan, MN,
²Oklahoma State University, Ardmore, OK
- 04:05 PM Welcome to Texas.** David D. Baltensperger*;
Texas A&M University, College Station, TX
- 04:20 PM Evolution of a Photographer and Author.** Wyman Meinzer*;
The State Photographer of Texas, Benjamin, TX
- 05:05 PM WSSA Presidential Presentation.** Carroll Moseley*;
Syngenta, Brown Summit, NC
- 05:20 PM SWSS Presidential Presentation.** Eric P. Castner*;
FMC, Pauls Valley, OK
- 05:35 PM Washington D. C. Update.** Lee Van Wychen*;
Weed Science Society of America, Alexandria, VA
- 05:55 PM IWSS Organization and Meeting Updates.** Samunder Singh*;
MICADA, Haryana, India, Hisar, India
- 06:05 PM Remembering Former WSSA and SWSS Members.** Wesley Everman*¹, Ryan J. Edwards²;
¹North Carolina State University, Raleigh, NC,
²WinField United, River Falls, WI
- 06:15 PM Awards Presentations.** Scott Senseman*;
The University of Tennessee, Knoxville, TN
- 06:40 PM Presentation of Honorary Members and Fellows.** Gregory K. Dahl*;
Winfield United – Retired, Eagan, MN

MONDAY AFTERNOON JANUARY 22

WSSA/SWSS Welcome and Awards Reception

LOCATION: Rio Grande Ballroom
TIME: 7:15 PM – 9:00 PM Central
Time

***SPEAKER**

TUESDAY MORNING JANUARY 23

Student Contest Judges Breakfast

LOCATION: Rio Ballroom
TIME: 6:00 AM – 7:00 AM Central
Time
CHAIR Marty Schraer
Syngenta
Meridian, ID
CO-CHAIR: Pratap Devkota
Syngenta
Vero Beach, FL

TUESDAY MORNING JANUARY 23

Sprayer Technology Meeting

LOCATION: Pecos
TIME: 6:00 AM – 7:00 AM Central
Time
MODERATOR: Muthukumar V.
Bagavathiannan
Texas A&M University
College Station, TX

TUESDAY MORNING JANUARY 23

Overcoming Hurdles in Graduate School

LOCATION: Live Oak
TIME: 7:00 AM – 8:00 AM Central
Time
MODERATOR: Pamela Carvalho-Moore
University of Arkansas
Fayetteville, AR
CO-MODERATOR: Isabel Schlegel Werle
University of Illinois
Urbana, IL

Graduate Students Only Please

TUESDAY MORNING JANUARY 23

IWGC Meeting

LOCATION: Llano
TIME: 7:00 AM – 8:00 AM Central
Time
MODERATOR: Todd A. Gaines
Colorado State University
Fort Collins, CO
CO-MODERATOR: Eric L. Patterson
Michigan State University
East Lansing, MI

TUESDAY MORNING JANUARY 23

WSSA Finance Committee Meeting

LOCATION: Directors
TIME: 7:00 AM – 9:00 AM Central
Time
MODERATOR: Greg Elmore

TUESDAY MORNING JANUARY 23

POSTER – WSSA/SWSS Poster

LOCATION: Regency ABCD
TIME: 7:00 AM – 9:00 AM Central
Time
CHAIR: Marty Schraer
Syngenta
Meridian, ID

CO-CHAIR: Pratap Devkota
Syngenta
Vero Beach, FL

**WSSA and SWSS Student Competition Posters
will be judged on Tuesday and Wednesday. Odd
numbered authors will be present on Tuesday and
Even numbered authors will be present on
Wednesday.**

***PRESENTER † STUDENT CONTEST**

†Weed Management in Corn with Reduced Rates of Atrazine. Akashdeep Singh Brar*¹, Milos Viric¹, Mark VanGessel², Kurt M. Vollmer³, Vijay Singh¹; ¹Virginia Tech, Painter, VA, ²University of Delaware, Georgetown, DE, ³University of Maryland, Queenstown, MD (1)

†A Precision Dual Tank Sprayer to Overcome Antagonism of Mixing Clethodim and 2,4-D for Control of Corn Volunteers in Enlist Corn. Adam E. Leise*¹, Quentin Cooksley², Amit J. Jhala¹; ¹University of Nebraska Lincoln, Lincoln, NE, ²John Deere- AKRS, Grand Island, NE (2)

†Clethodim and Quizalofop Antagonism from 2,4-D on Volunteer Corn Was Not Resolved by Using a Dual-Tank Spray System. Marcelo Zimmer*¹, Diego J. Contreras², Wesley Everman², Chad J. Lammers³, Jess J. Spotanski³, Lauren M. Lazaro⁴, William G. Johnson¹, Bryan G. Young⁵; ¹Purdue

University, West Lafayette, IN, ²North Carolina State University, Raleigh, NC, ³Midwest Research Inc., York, NE, ⁴Blue River Technology, Sunnyvale, CA, ⁵Purdue University, Brookston, IN (3)

†**Corn hybrid Sensitivity to Amicarbazone & Metribuzin.**

Michael R. Dodde*¹, Jason K. Norsworthy¹, Tom Barber², Ryan S. Henry³; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Lonoke, AR, ³UPL NA Inc., Fort Wayne, IN (4)

†**Carryover of Indaziflam to Soybean and Corn Crops in Sugarcane Reform Areas.**

Luiz Henrique F de Campos¹, Francielli S de Oliveira*², Leonardo de O Semensato³, Paulo Cesar I. Donadoni⁴, Mirella F. Ortiz², Pedro J. Christoffoleti⁵; ¹HERB tech – Consultoria e Pesquisa, Iracemópolis, Brazil, ²Utah State University, Logan, UT, ³Federal University of São Carlos, Araras, Brazil, ⁴Bayer Crop Science, São Paulo, Brazil, ⁵HERB tech – Consultoria e Pesquisa, Piracicaba, Brazil (5)

†**Assessment of Cover Crop Adoption and Management in Wisconsin Corn-Soybean Cropping Systems.**

Guilherme Chudzik*, Nicholas J. Arneson, Jose J. Nunes, Rodrigo Werle; University of Wisconsin-Madison, Madison, WI (6)

†**Multifarious Approach to Manage Weeds in Soybean and Subsequent Sugar Beet Crop.**

Navjot Singh*¹, Thomas J. Peters², Seth Naeve¹, Ryan P. Miller³, Debalin Sarangi⁴; ¹University of Minnesota, Saint Paul, MN, ²North Dakota State University, Fargo, ND, ³University of Minnesota, Rochester, MN, ⁴University of Minnesota, St. Paul, MN (7)

†**Using Winter Wheat to Suppress Palmer Amaranth (*Amaranthus palmeri* S. Wats.) Emergence in a Variety of Soybean Production Systems.**

Jared T. Smith*¹, Jason K. Norsworthy¹, Leonard B. Piveta¹, Summer L. Pritchett², Michael R. Dodde¹, Tom Barber³; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas Department of Crop, Soil, and Environmental Science, Fayetteville, AR, ³University of Arkansas, Lonoke, AR (8)

†**Impact of Layered-Residual Herbicide on Soybean Growth and Yield.**

Sithin Mathew*¹, Aaron Lorenz², Seth Naeve², Vasudha Sharma², Debalin Sarangi³; ¹Department of Agronomy and Plant Genetics, University of Minnesota, Minneapolis, MN, ²University of Minnesota, Saint Paul, MN, ³University of Minnesota, St. Paul, MN (9)

†**Early Season Weed Suppression in Soybeans with Cover Crops and Preemergence Herbicides.**

Wade S. Reiter*, David P. Russell, Audrey Gamble; Auburn University, Auburn, AL (10)

†**Management of Herbicide-resistant *Phalaris minor* and Broad-leaf Weeds by Sequential Applications of Pre and Post-emergence Herbicides in Wheat (*Triticum aestivum* L.).** Deepak Loura*; Chaudhary Charan Singh Haryana Agricultural University, Hisar, Haryana, India, Hisar, India (11)

†**Does Planting Date and Row Width Impact Weed Suppression in Soybean?** Matthew S. Goddard*, Christy L. Sprague, Maninder P. Singh; Michigan State University, East Lansing, MI (12)

†**Potential Reduction of Non-Imidazolinone (IMI) Rice Grain Yield by IMIs Soil Residual Activity.** Diego M. Chiapinotto¹, Luis A. Avila², Bianca C. Aranha¹, Vívian E. Viana¹, Edinaldo Camargo*³; ¹UFPel, Pelotas, Brazil, ²Mississippi State University, Starkville, MS, ³Universidade Federal de Pelotas, Pelotas, Brazil (13)

†**Unraveling the Influence of Planting Date, Row Spacing, and Herbicide Programs on Weed Management in Soybean.** Salina Raila*, Hannah Buessing, Sarah Lancaster, Alec Adam, Wade Burris, Igor Gustavo Rezende Lima; Kansas State University, Manhattan, KS (14)

†**Weed Control Efficacy and Rice Response of Pendimethalin Herbicide Mixtures Applied Post-emergence in Water-seeded Rice.** Aaron Becerra-Alvarez*, Kassim Al-Khatib; University of California Davis, Davis, CA (15)

†**Influence of Deer Repellent and Herbicide Tank-mixes on Weed Control and Deer Browsing in Soybean.** Grady L. Rogers*; University of Missouri, Columbia, MO (16)

†**Cereal Rye Cover Crop and Tillage Regime Alters Waterhemp Emergence Pattern Across a Latitudinal Gradient in the United States.** Purushottam Gyawali*¹, Ahmadreza Mobli², Pavle Pavlovic³, Rodrigo Werle⁴, Jason K. Norsworthy⁵, Martin Williams⁶, Muthukumar V. Bagavathiannan⁷; ¹Texas A&M University, Department of Soil and Crop Sciences, College Station, TX, ²University of Wisconsin, Madison, WI, ³University of Illinois Urbana-Champaign, Champaign, IL, ⁴University of Wisconsin-Madison, Madison, WI, ⁵University of Arkansas, Fayetteville, AR, ⁶United States Department of Agriculture, Agricultural Research Service, Urbana, IL, ⁷Texas A&M University, College Station, TX (17)

†**Effect of Application Timing on Rice Tolerance to Fluridone.** Maria Carolina C R Souza*¹, Jason K. Norsworthy², Leonard B. Piveta², Pamela Carvalho-Moore², Summer L. Pritchett³, Samuel C. Noe⁴, Thomas R. Butts⁵; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³University of Arkansas Department of Crop, Soil, and

Environmental Science, Fayetteville, AR, ⁴University of Arkansas, Fayetteville, KY, ⁵University of Arkansas, Lonoke, AR (18)

†**Effects of Glufosinate on Soil Microbiomes and Biodegradation of Glufosinate.** Sarobi Das*, Renee Ralston, Woo-Suk Chang; University of Texas at Arlington, Arlington, TX (19)

†**Integration of Herbicides and Cover Crops for Effective Weed Management in Peanut.** Gourav Chahal*¹, Annu Kumari², Andrew J. Price³, James C. Bonnell⁴; ¹Auburn University, Auburn, AL, ²Crop, Soil & Environmental Sciences Department, Auburn University, Auburn, AL, ³USDA-ARS-NSDL, Auburn, AL, ⁴USDA- Technician, Auburn, AL (20)

†**Soil Microbial Activity and Fate of Soil Residual Herbicides in Cover Cropping Systems.** Lucas Oliveira Ribeiro Maia*¹, Bryan G. Young², Eileen J. Kladvik¹, Shalamar Armstrong¹, William G. Johnson¹; ¹Purdue University, West Lafayette, IN, ²Purdue University, Brookston, IN (21)

†**Palmer Amaranth Suppression in Cotton with Harvest Aid Herbicides.** Wade Burris*, Sarah Lancaster, Salina Raila, Alec Adam; Kansas State University, Manhattan, KS (22)

†**Sorgoleone Production and Rhizosphere Nitrogen Retention in Diverse Johnsongrass Biotypes.** Megan L. Schill*; Texas A&M, College Station, TX (23)

†**Role of Metabolism in Response to Quizalofop-P-Ethyl in CoAXium Wheat.** Amber Pelon*¹, Franck E. Dayan², Todd A. Gaines²; ¹Colorado State University, Berthoud, CO, ²Colorado State University, Fort Collins, CO (24)

†**Evaluation of Biological Nitrification Inhibition Potential in Diverse Cereal Rye Lines.** Kapil A. Chobhe*¹, Nithya Rajan¹, Megan L. Schill², Nithya K. Subramanian¹, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Texas A&M, College Station, TX (25)

†**Clethodim Efficacy on Texas Panicum (*Urochloa texana*) as Affected by Growth Stage and Adjuvant.** Alexis R. Clobas-Celiz*, Michael W. Marshall; Clemson University, Blackville, SC (26)

†**Assessing Phytotoxicity and Weed Control Efficacies of Five Newer Herbicides in Fraser Fir Production.** Manjot Kaur Sidhu*¹, Debalina Saha²; ¹Michigan State University, Lansing, MI, ²Department of Horticulture, Michigan State University, East Lansing, MI (27)

†**Sensitivity of Pearl Millet (*Pennisetum glaucum* L.) Parental Lines to Clethodim, Quizalofop, Imazamox, and Nicosulfuron.** Midhat Zulafkar Tugoo*¹, Vipin Kumar², Vara Prasad¹, Ramasamy Perumal³; ¹Kansas State University, Manhattan, KS, ²Cornell University, Ithaca, NY, ³Kansas State University, Hays, KS (28)

†**Assessing Green Antelopehorn Milkweed (*Asclepias viridis*) Injury from Auxin Herbicides.** Kayla L. Broster*¹, John D. Byrd, Jr.¹, Thomas H. Duncan², Chris R. Gregory²; ¹Mississippi State University, Mississippi State, MS, ²Mississippi State University, Starkville, MS (29)

†**Impact of Weed Control Timing and Fertilizer on Warm Season Pastures.** Keegan T. Crawford*; Texas A&M University, College Station, TX (30)

†**A Machine Learning Framework for the Detection and Localization of Annual Bluegrass (*Poa annua*) in Bermudagrass Turf.** Bholuram Gurjar*¹, Ubaldo Torres¹, Muthukumar V. Bagavathiannan¹, Chase Straw²; ¹Texas A&M University, College Station, TX, ²Texas A&M, College Station, TX (31)

†**Influence of Adjuvants on Hexazinone Efficacy for Smutgrass (*Sporobolus jacquemontii*) Control.** Sudip Regmi*¹, Brent A. Sellers², Jose Dubeux³, Temnotfo Mncube²; ¹MS Student, Department of Agronomy, University of Florida, Phalewas, Nepal, ²University of Florida, Ona, FL, ³University of Florida, Mariana, FL (32)

†**Quantifying Bermudagrass (*Cynodon dactylon*) and Zoysiagrass (*Zoysia* Spp.) Dew Retention: First Steps Toward Targeted Herbicide Application and Removal.** Amy L. Wilber*¹, James D. McCurdy²; ¹Mississippi State University, Mississippi State, MS, ²Mississippi State University, Starkville, MS (33)

†**The Use of Glufosinate to Address *Poa annua* Infestations in Dormant Bermudagrass (*Cynodon dactylon*).** Bridgette C. Johnson*, Joseph S. McElroy; Auburn University, Auburn, AL (34)

†**Turf Protection Products Influence Floral Reflectance and Pollinator Foraging of Lawn Weeds.** Navdeep Godara*, Daewon Koo, Juan Romero, Shawn Askew; Virginia Tech, Blacksburg, VA (35)

†**Determining the Value of Common Turfgrass Forbs as a Pollinator Resource.** Sara R. Scott*¹, JoVonn G. Hill¹, David W. Held², Gerald M. Henry³, Isadora G P de Souza¹, James D. McCurdy¹; ¹Mississippi State University, Starkville, MS,

²Auburn University, Auburn, AL, ³University of Georgia, Athens, GA (36)

†**Annual Bluegrass (*Poa annua* L.) Herbicide Resistance in Oregon Hazelnut Orchards.** Joshua W. Miranda*, Marcelo L. Moretti; Oregon State University, Corvallis, OR (37)

†**Radiant Heat, Hot Water, and Organic Chemicals Control Annual Bluegrass in Dormant Turf.** Juan Romero*, Shawn Askew; Virginia Tech, Blacksburg, VA (38)

†**Critical Timing of Palmer Amaranth (*Amaranthus palmeri*) Removal in Stevia (*Stevia rebaudiana*).** Stephen J. Ippolito*¹, Katherine M. Jennings¹, David W. Monks¹, Sushila Chaudhari², David L. Jordan¹, Levi D. Moore³, Colton D. Blankenship¹, Kira Sims¹, Chitra Lnu¹; ¹North Carolina State University, Raleigh, NC, ²FMC, East Lansing, MI, ³Southeast Ag Research, Inc, Chula, GA (39)

†**Evaluating Biodegradable Mulches (BDMs) for Longevity in Strawberry-Cucumber Relay Cropping Systems.** Emily Witt*¹, Nathan Boyd²; ¹UF IFAS GCREC, Wimauma, FL, ²University of Florida, Balm, FL (40)

†**Effects of Preemergence S-Metolachlor Alone or its Co-application with Fertilizer Enhancer and Chelated Iron on Weed Control Efficacy and Crop Safety in Tomato (*Solanum lycopersicum*) Plasticulture Production.** Ruby Tiwari*¹, Ramdas Kanissery²; ¹University of Florida/Southwest Florida Research and Education Center, Immokalee, FL, ²University of Florida – IFAS, Immokalee, FL (41)

†**Use of Silage Tarps for Early-season Weed Management in Small-scale Potato Production.** Josue D. Cerritos*¹, Stephen L. Meyers¹, Jeanine Arana², Emmanuel G. Cooper¹, Carlos A. López Manzano¹; ¹Purdue University, West Lafayette, IN, ²Purdue University/Horticulture, West Lafayette, IN (42)

†**First Report of Multiple Herbicide-Resistance in *Echinochloa walteri* (Walter's Barnyardgrass) in Texas Rice.** Tamara T. Mundt*, Caroline Valiati, Gabriela Elizarraras, Muthukumar V. Bagavathiannan, Nithya K. Subramanian; Texas A&M University, College Station, TX (43)

†**Integrated Strategies to Manage Volunteer Potatoes and Colorado Potato Beetle.** Hannah M. Johnson*, Erin E. Burns; Michigan State University, East Lansing, MI (44)

†**Evaluating Herbicide Resistance in Waterhemp (*Amaranthus tuberculatus*) Populations from Southern Illinois.** Cristiana B. Rankrape*¹, Eric J. Miller¹, Avery Shikanai², Karla L. Gage³; ¹Southern Illinois University,

Carbondale, IL, ²North Dakota State University, Fargo, ND,
³Southern Illinois University Carbondale, Carbondale, IL (45)

†**Sweetpotato Tolerance to Herbicides Applied Post-transplant.** Ryan H. Stainback*, Samuel E. Crawford, Stephen J. Ippolito, Colton D. Blakenship, Katherine M. Jennings; North Carolina State University, Raleigh, NC (46)

†**Inheritance and Segregation of Non-Target-Site Resistance to S-Metolachlor in Waterhemp (*Amaranthus tuberculatus*).** Isabel Werle*¹, Lucas Bobadilla², Filipi Machado¹, Aaron Hager¹, Patrick Tranel¹; ¹University of Illinois, Urbana, IL, ²University of Illinois, Champaign, IL (47)

†**Management of Problematic Weeds in Truvera Sugarbeet.** Ian G. Waldecker*, Christy L. Sprague; Michigan State University, East Lansing, MI (48)

†**Investigating Dicamba Resistance Across Kochia and Palmer Amaranth Populations from Colorado.** André Lucas Simões Araujo*, Jacob S. Montgomery, Todd A. Gaines; Colorado State University, Fort Collins, CO (49)

†**Intraspecific Competitvity of Quinclorac Resistant- and Suceptible-junglerice (*Echinochloa colona*).** Diego Andres Rodriguez*¹, Juan Camilo Velásquez R², Guido Armando Plaza³, Veronica Hoyos⁴, Nilda Roma-Burgos², Eduardo Graterol⁵, Maria Fernanda Alvarez⁶, Yamid Sanabria⁵; ¹Latin American Fund for Irrigated Rice (FLAR) and Alliance of Bioversity International and CIAT, Cali, Colombia, ²University of Arkansas, Fayetteville, AR, ³Universidad Nacional de Colombia, Bogotá, Colombia, ⁴Universidad Nacional de Colombia, Palmira, Colombia, ⁵Latin American Fund for Irrigated Rice (FLAR), Cali, Colombia, ⁶Alliance of Bioversity International and CIAT, Cali, Colombia (50)

†**Understanding Metabolic Resistance to Imazamox in Feral Rye (*Secale cereale*) Through Transcriptomics.** William B. Kramer*, Franck E. Dayan, Todd A. Gaines, Neeta Soni; Colorado State University, Fort Collins, CO (51)

†**Confirmation of Resistance to ALS-Inhibiting Herbicides in a Suspected Barnyardgrass (*Echinochloa colona*) Population from Texas.** Hazal Camci Arik*, Tamara T. Mundt, Muthukumar V. Bagavathiannan, Nithya K. Subramanian; Texas A&M University, College Station, TX (52)

†**Elucidation of the Genetic and Molecular Bases of Conyza Sumatrensis Resistant to 2,4-D Herbicide.** Anthony Côrtes Gomes*¹, Jacob S. Montgomery², André Lucas Simões Araujo², Camila Ferreira de Pinho¹, Todd A. Gaines²; ¹Federal Rural University of Rio de Janeiro, Seropédica, Brazil, ²Colorado State University, Fort Collins, CO (53)

†**Evaluating Potential Glyphosate Resistant Johnsongrass (*Sorghum halepense*) Biotypes in Texas.** Ryan A. Matschek*¹, Reagan Noland², Muthukumar V. Bagavathiannan³, Cody Scott¹, Clay Cole²; ¹Angelo State University, San Angelo, TX, ²Texas A&M AgriLife Extension, San Angelo, TX, ³Texas A&M University, College Station, TX (54)

†**Genome Assembly and Analysis of *Digitaria ischaemum* (Smooth Crabgrass).** Claudia A. Rutland*¹, Eric L. Patterson², Todd A. Gaines³, Luan Cutti⁴, Victor Llaca⁵, Brian Zeka⁶, Leslie Goertzen⁷, Jinesh Patel⁷, Joseph S. McElroy⁷; ¹Auburn University Department of Crop, Soil, and Environmental Sciences, Auburn, AL, ²Michigan State University, East Lansing, MI, ³Colorado State University, Fort Collins, CO, ⁴Federal University of Rio Grande do Sul, Porto Alegre, Brazil, ⁵Corteva Agriscience, Johnston, IA, ⁶Corteva, Johnston, IA, ⁷Auburn University, Auburn, AL (55)

†**Herbicide Resistance in Major Weed Species in Virginia.** Milos Viric*¹, Vipin Kumar², Akashdeep Singh Brar¹, Michael L. Flessner³, Vijay Singh¹; ¹Virginia Tech, Painter, VA, ²University of Nebraska-Lincoln, Lincoln, NE, ³Virginia Tech, Blacksburg, VA (56)

†**Optimizing Protoplast Isolation in Waterhemp (*Amaranthus tuberculatus*): Analysis of Oxidative Stress by Flow Cytometry.** Peter E. Beerbower*, Robert Sabba, Michael J. Christoffers; North Dakota State University, Fargo, ND (57)

†**Herbicide Resistant Redroot Pigweed Populations in North Carolina.** Ronel J. Argueta*¹, Eric Jones², Diego J. Contreras¹, Jackson W. Alsdorf¹, Wesley Everman¹; ¹North Carolina State University, Raleigh, NC, ²South Dakota State University, Brookings, SD (58)

†**Potential Maladaptive Impact of Transgenerational Memory of Weed Competition on Spring Wheat.** Albert O. Kwarteng*; University of Idaho, Moscow, ID (59)

†**Initial Herbicide Screening of Pigweed (*Amaranthus* Spp.) in Alabama.** Debra R. Smitherman*¹, David P. Russell¹, Steve Brown¹, Bridgette C. Johnson¹, Aniruddha Maity¹, Claudia A. Rutland², Joseph S. McElroy¹; ¹Auburn University, Auburn, AL, ²Auburn University Department of Crop, Soil, and Environmental Sciences, Auburn, AL (60)

†**Investigating How Melatonin May Influence the Antioxidant Mechanism in 2,4-D Treated Cotton.** Josiane C. Argenta*¹, Antonio Rodrigues da Cunha Neto², Aricia Ritter Correa¹, Dante Elias¹, Te-Ming (Paul) Tseng³; ¹Mississippi State University, Starkville, MS, ²Federal University of Lavras,

Lavras, Brazil, ³Mississippi State University, Mississippi State, MS (61)

†**Basis for Dicamba Resistance in Palmer Amaranth (*Amaranthus palmeri*).** Dustin Abdiel Moreno*¹, Raphael M. Garrido², Larry Steckel³, Sofia Marques-hill⁴, Sarah Morran⁵, Todd A. Gaines⁵, Franck E. Dayan⁵; ¹University of Panama, David, Panama, ²São Paulo State University, Assis, Brazil, ³University of Tennessee, Jackson, TN, ⁴Colorado State University – Agricultural Biology, Fort Collins, CO, ⁵Colorado State University, Fort Collins, CO (62)

†**Effect of Temperature, CO₂, and Soil Moisture Stress on Vegetative and Reproductive Traits of Johnsongrass (*Sorghum halepense*).** Vikas C. Tyagi*, Nithya K. Subramanian, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX (63)

†**Transcriptome Analysis to Identify Genes Involved in Metabolic Resistance to Multiple Herbicides in Palmer Amaranth (*Amaranthus palmeri*).** Rishabh Singh*¹, Yaiphabi Kumam¹, Mohit Mahey², Eric L. Patterson², Sanzhen Liu¹, Mithila Jugulam¹; ¹kansas State University, Manhattan, KS, ²Michigan state university, East Lansing, MI (64)

†**Studying How Genes Influence Crossbreeding Between *Sorghum bicolor* and *S. halepense* with the Help of Sorghum Recombinant Inbred Lines.** Usha R. Pediredi*, Nithya K. Subramanian, George Hodnett, Patricia E. Klein, William Rooney, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX (65)

†**Effects of Microgravity, Moisture, & Light on the Germination of Palmer Amaranth.** William Yates*¹, Muthukumar V. Bagavathiannan², Aniruddha Maity¹; ¹Auburn University, Auburn, AL, ²Texas A&M University, College Station, TX (66)

†**Sublethal Herbicide Application Effects on the Chemical Plant Defenses of Honey Mesquite (*Prosopis glandulosa*).** Rebecca D. Burson*¹, Morgan L. Treadwell², Douglas R. Tolleson³, James P. Muir⁴, Caitlyn E. Cooper-Norris⁵; ¹Texas A&M University/Department of Rangeland, Wildlife and Fisheries Management, San Angelo, TX, ²Texas A&M AgriLife Extension Service/San Angelo Research and Extension Center, San Angelo, TX, ³Texas A&M AgriLife Research/Sonora Research Station, Sonora, TX, ⁴Texas A&M AgriLife Research/Stephenville Research and Extension Center, Stephenville, TX, ⁵Texas Tech University/Department of Natural Resources Management, Lubbock, TX (67)

†**Buffering the Effects of a Changing Climate: Halophytes as a Source of Osmotic Stress Tolerance.** John M. Lemas*, Cynthia S. Brown, Troy Ocheltree, Philip Westra, Todd A. Gaines; Colorado State University, Fort Collins, CO (68)

†**Chalcones: Novel Cell Division Inhibitors.** Raphael M. Garrido*¹, Patrick Rômbola Ozanique², Luis Octávio Regasini², Rosana Marta Kolb¹, Franck E. Dayan³; ¹São Paulo State University, Assis, Brazil, ²São Paulo State University, São José Do Rio Preto, Brazil, ³Colorado State University, Fort Collins, CO (69)

†**MOA Study on New Natural Herbicide Discovered by Artificial Intelligence.** Alyssa Twitty*¹, Franck E. Dayan¹, Noa Levy², Yaniv Mizrahi², Yosef Geva², Yael Phillip²; ¹Colorado State University, Fort Collins, CO, ²Agrematch, Revohot, Israel (70)

†**Detection of Male and Female Plants of Palmer Amaranth and Waterhemp Using RGB Sensor and Machine Learning.** Bismark Anokye*¹, Ubaldo Torres², Bholuram Gurjar³, Navjot Singh⁴, Muthukumar V. Bagavathiannan³; ¹Texas A&M, Collage Station, TX, ²Texas Tech University, Lubbock, TX, ³Texas A&M University, College Station, TX, ⁴University of Minnesota, Saint Paul, MN (71)

†**Effect of the S-Metolachlor Herbicide Applied in Pre-emergence on the Production of Weeds Leaves Epicuticular Wax, and in the Efficiency of Post-emergent Herbicides.** Diogo M. Link*¹, Luis A. Avila¹, Maurício Files², Luiza Jacobsen¹, Edinaldo Camargo², Renan S. Silva²; ¹Mississippi State University, Starkville, MS, ²Universidade Federal de Pelotas, Pelotas, Brazil (72)

†**Investigating the Role of Plant Morphology, Growth Stage, and Diversity in Weed Recognition.** Matthew Kutugata*¹, Søren K. Skovsen², Maria Laura Cangiano³, Chris Reberg-Horton³, Steven Brian Mirsky⁴, Muthukumar V. Bagavathiannan⁵; ¹Texas A&M, College Station, TX, ²Aarhus University, Aarhus, Denmark, ³North Carolina State University, Raleigh, NC, ⁴USDA ARS, Beltsville, MD, ⁵Texas A&M University, College Station, TX (73)

†**Enabling WeedID with Printable Moisture Sensors.** Akhil Naik Banothu*¹, Vinay Budhraj¹, Prabha Sundaravadivel², Reginald Fletcher³, Krishna Reddy³; ¹Dept. of Electrical and Computer Engineering, The University of Texas at Tyler, Tyler, TX, ²The University of Texas at Tyler, Tyler, TX, ³United States Department of Agriculture, Agricultural Research Service, Stoneville, MS (74)

†Developing a Near Real-time Weed Detection and Site-specific Drone Spray Module. Swarnabha Roy*¹, Ubaldo Torres¹, Bholuram Gurjar¹, Navjot Singh², Aashay Kadakia¹, Bishwa B. Sapkota¹, Martin Wnorowski¹, Stavros Kalafatis¹, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Texas A&M, College Station, TX (75)

†Evaluation of Electrocuting for Weed and Tall Fescue Seedhead Management in Pastures. Grant D. Coe*; University of Missouri, Columbia, MO (76)

†Effect of Spray Volume and Application Timing on Weed Control Efficacy Using a Remotely Piloted Aerial Application System in Rice. Reuben Senyo Kudiabor*, Bholuram Gurjar, Xin-Gen Zhou, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX (77)

†Exploring Various Deep Learning Architectures for Crop and Weed Detection. Rutvij S. Wamanse*¹, Dhiraj Srivastava², Vijay Singh³; ¹Virginia Tech, Blacksburg, VA, ²Donald Danforth Plant Science Center, St Louis, MO, ³Virginia Tech, Painter, VA (78)

†Smart Sprayer Applications: Role of Nozzle Type, Number, and Height. Zaim Ugljic*¹, Bruno Canella Vieira¹, Ryan P. DeWerff², Rodrigo Werle¹; ¹University of Wisconsin – Madison, Madison, WI, ²University of Wisconsin, Madison, WI (79)

†Influence of Application Parameters on Spray Coverage and Weed Control with DJI Agras T40 UAV. Trace M. Thompson*; University of Missouri, Columbia, MO (80)

†Standardization of Unmanned Aerial System-Based Herbicide Application in Row-Crops. Fatemeh Esmaeilbeiki*¹, Dhiraj Srivastava², Daniel E. Martin³, Vijay Singh⁴; ¹Virginia Tech, Blacksburg, VA, ²Donald Danforth Plant Science Center, St Louis, MO, ³United States Department of Agriculture, College Station, TX, ⁴Virginia Tech, Painter, VA (81)

†Weed Detection Using Computer Vision and Deep Learning. Akhilesh Sharma*, Vipin Kumar, Louis Longchamps, Bharat Hariharan; Cornell University, Ithaca, NY (82)

†Development of a Robotic Flaming Weed Control System Using a Six-axis Manipulator Mounted on a Quadruped Robot. Joe Johnson*¹, Di Wang², Shuangyu Xie², Chengsong Hu², Dezhen Song², Muthukumar V. Bagavathiannan²; ¹Soil and Crop Sciences, Texas A&M University, College Station, TX, ²Texas A&M University, College Station, TX (83)

†**Directed Energy: A Possible Solution to Control Weed Seeds?** Caroline Beatriz Wayhs Backes*¹, Sarah A.d. Chu¹, Lauren M. Lazaro², Jon Jackson³, Neil Sater³, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Blue River Technology, Sunnyvale, CA, ³Global Neighbor Inc., Xenia, OH (84)

†**Evaluation of Electrical Weed Control in California Orchards.** Tong Zhen*, Bradley D. Hanson; University of California, Davis – Department of Plant Sciences, Davis, CA (85)

†**Impact of Electricity on Soil Health and Weed Control in Blueberries.** Luisa C. Baccin*, Marcelo L. Moretti; Oregon State University, Corvallis, OR (86)

†**Utilizing Direct-Injection Technology to Mitigate Auxin + Graminicide Herbicide Antagonism.** Jake A. Patterson*¹, Darrin M. Dodds², Antonio Augusto Tavares¹, Sydney C. Baker¹; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Mississippi State, MS (87)

†**Exploring a Toolbox of Technology: Possibilities for Future Weed Control Solutions.** Mandeep Singh*, Amit J. Jhala; University of Nebraska-Lincoln, Lincoln, NE (88)

TUESDAY MORNING JANUARY 23

LOCATION:	Regency ABCD
TIME:	7:00 AM – 9:00 AM Central Time
Chair:	Thomas C. Mueller University of Tennessee Knoxville, TN
CO-CHAIR	Mike Lovelace Corteva Agroscience Newcastle, OK

***PRESENTER**

POSTER – 01. Agronomic Crops

Palmer Amaranth and Waterhemp in Idaho: Current Distribution and Glyphosate Resistance Confirmation. Albert T. Adjesiwor*¹, Clarke Alder², André Lucas Simões Araujo³, Joel Felix⁴, Todd A. Gaines³; ¹University of Idaho, Kimberly,

ID, ²Amalgamated Sugar, Boise, ID, ³Colorado State University, Fort Collins, CO, ⁴Oregon State University, Ontario, OR (89)

Effect of Delayed Postemergence Herbicide Application on Corn. Nader Soltani*, Peter H. Sikkema; University of Guelph, Ridgetown, ON, Canada (90)

1. Effect of Delayed Postemergence Herbicide Application on Soybean. Nader Soltani*, Peter H. Sikkema; University of Guelph, Ridgetown, ON, Canada (91)

Effectiveness of Salvage Herbicide Programs for Weed Management in Cotton. Taghi Bararpour*; Mississippi State University, Stoneville, MS (92)

Weed Management Programs in Mississippi Corn. Taghi Bararpour*, Jason A. Bond, Corey Bryant; Mississippi State University, Stoneville, MS (93)

Residual Herbicides for Broad- Spectrum Weed Management Programs in Mississippi Peanut. Taghi Bararpour*; Mississippi State University, Stoneville, MS (94)

Soybean Response to Simulated Drift of Herbicides Commonly Used to Manage Roadside Vegetation in North Carolina. Estefania Gomiero Polli*, Travis W. Gannon, Ronald R. Rogers, Mathieu C. LeCompte; North Carolina State University, Raleigh, NC (95)

Fall Application of Soil Residual Herbicides Reduces Weed Abundance in Spring-Planted Fava Beans. Akamjot Brar*¹, Qasim Khan², Fabian Menalled¹, Zach Miller³, Clint W. Beiermann⁴, Kent McVay², Lovreet S. Shergill²; ¹Montana State University, Bozeman, MT, ²Montana State University, Huntley, MT, ³Montana State University, Corvallis, MT, ⁴University of Nebraska-Lincoln, Scottsbluff, NE (96)

Corn (*Zea Mays*) Tolerance to PRE and POST Application of Metribuzin. Donnie Miller*, Ashley Barfield; LSU AgCenter, St Joseph, LA (97)

Initial Adoption of Physical Impact Mills in Canada. Breanne D. Tidemann*¹, Charles M. Geddes², Shaun Sharpe³; ¹Agriculture and Agri-Food Canada, Lacombe, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³Agriculture and Agri-Food Canada, Saskatoon, SK, Canada (98)

Enversa™: A New Tool for In-season Residual Weed Control. Kelly A. Backscheider*¹, David M. Simpson², Drew Ellis³, Mike Lovelace⁴, Lowell D. Sandell⁵; ¹Corteva, Franklin, IN, ²Corteva, Indianapolis, IN, ³Corteva agriscience – IFS,

Arlington, TN, ⁴Corteva Agriscience, Newcastle, OK, ⁵Corteva Agriscience, Ankeny, IA (99)

A Systems Approach for Controlling Dicamba Resistant Palmer Amaranth (*Amaranthus palmeri*). Megan M. Singletary*¹, Peter A. Dotray², Larry Steckel³, Gaylon Morgan⁴; ¹Texas Tech University, Lubbock, TX, ²Texas Tech University/Texas A&M AgriLife Research and Extension, Lubbock, TX, ³University of Tennessee, Jackson, TN, ⁴Cotton Incorporated, Cary, NC (100)

Response of Newly Established Energycane to Cyhalofop-butyl and Florpyrauxifen-benzyl. D Calvin Odero*¹, Shabnam Sadeghibaniani²; ¹University of Florida, Belle Glade, FL, ²University of Florida, Belle Glade, FL, FL (101)

Impact of Application Time on the Fate of PRE-emergence Herbicides in Wisconsin Early-Planted Soybean. Rodrigo Werle*¹, Guilherme Chudzik¹, Ryan P. DeWerff², Shelby Lanz³, Thomas C. Mueller³; ¹University of Wisconsin-Madison, Madison, WI, ²University of Wisconsin, Madison, WI, ³University of Tennessee, Knoxville, TN (102)

Efficacy of Fluridone in Peanut Production Systems. Ethan Foote*, David L. Jordan; North Carolina State University, Raleigh, NC (103)

Effects of Weed Competition Duration on Grain and Fiber Hemp (*Cannabis sativa*) Yield. Kevin Bamber*¹, Michael L. Flessner¹, Karla L. Gage², Eric J. Miller³, Kaitlin E. Creager³, Matthew P. Spoth¹, Lynn M. Sosnoskie⁴; ¹Virginia Tech, Blacksburg, VA, ²Southern Illinois University Carbondale, Carbondale, IL, ³Southern Illinois University, Carbondale, IL, ⁴Cornell University, Geneva, NY (104)

Weed Suppression in Quinoa Fields: Evaluating Chemical and Mechanical Control Methods. Sirwan Babaei*¹, Hossein Tarimoradi², Farzad Hoseinpanahi³, Iraj Tahmasebi³, Karla L. Gage⁴; ¹University of Kurdistan, Sanandaj, Iran, ²MSc Student, University of Kurdistan, Iran, Sanandaj, Iran, ³University of Kurdistan, Iran, Sanandaj, Iran, ⁴Southern Illinois University Carbondale, Carbondale, IL (105)

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Acacio Goncalves Netto*¹, Marcelo Nicolai¹, Ramiro Fernando Lopez Ovejero², Gilmar José Picoli Junior², Vanessa Francieli Vital Silva², Paulo Ricardo Moreira da Silva¹; ¹Agro do Mato Soluções Agronômicas, Santa Bárbara D'oeste, Brazil, ²Bayer Crop Science, São Paulo, Brazil (115)

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¹Louisiana State University (LSU AgCenter), Baton Rouge, LA, ²University of Arkansas, Fayetteville, AR, ³Cornell University, Ithaca, NY, ⁴LSU Ag Center, Alexandria, LA, ⁵LSU AgCenter, St Joseph, LA (178)

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¹Auburn University, Auburn, AL, ²Auburn University Department of Crop, Soil, and Environmental Sciences, Auburn, AL, ³Colorado State University, Fort Collins, CO, ⁴Michigan State University, East Lansing, MI, ⁵Corteva Agriscience, Johnston, IA, ⁶Federal University of Rio Grande do Sul, Porto Alegre, Brazil, ⁷Kansas State University, Manhattan, KS (179)

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¹Agriculture and Agri-Food Canada, Saint-jean-sur-richelieu, QC, Canada, ²Agriculture and Agri-Food Canada, Harrow, ON, Canada, ³Agriculture and Agri-Food Canada, Ottawa, ON, Canada (180)

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***PRESENTER**

Revisiting the Origins of Glyphosate Resistant Giant Ragweed (*Ambrosia trifida* L.) in Canada. Eric Page*¹, Sara Martin², Sydney Meloche¹, Alyssa Thibodeau¹, Robert Nurse¹, Peter H. Sikkema³, Francois Tardif⁴, Mike Cowbrough⁵, Martin Laforest⁶; ¹Agriculture and Agri-Food Canada, Harrow, ON, Canada, ²Agriculture and Agri-Food Canada, Ottawa, ON, Canada, ³University of Guelph, Ridgetown, ON, Canada, ⁴University of Guelph, Guelph, ON, Canada, ⁵Ontario Ministry of Agriculture Food and Rural Affairs, Guelph, ON, Canada, ⁶Agriculture and Agri-Food Canada, Saint Jean Sur Richelieu, QC, Canada (188)

The Ancestral Karyotype of the Heliantheae Alliance, Herbicide Resistance and Human Allergens: Insights from the Genomes of Common and Giant Ragweed. Sara Martin¹, Martin Laforest², Eric Page*³; ¹Agriculture and Agri-Food

Canada, Ottawa, ON, Canada, ²Agriculture and Agri-Food Canada, Saint Jean Sur Richelieu, QC, Canada, ³Agriculture and Agri-Food Canada, Harrow, ON, Canada (189)

Overexpression of *TaHPPD* Gene in Wheat (*Triticum aestivum*) Reduces Sensitivity to Mesotrione. Susee Sudhakar, Yaiphabi Kumam, Hyeonju Lee, Veerendra Sharma, Harold Trick, Mithila Jugulam*; Kansas State University, Manhattan, KS (190)

Molecular Assays for Rapid Group 2 and Group 9 Resistance Diagnostics in North American Broadleaves. Juliano Sulzback¹, Ednaldo A. Borgato*², Luan Cutti³, Erin E. Burns¹, Eric L. Patterson¹; ¹MICHIGAN STATE UNIVERSITY, East Lansing, MI, ²Kansas State University, Manhattan, KS, ³Federal University of Rio Grande do Sul, Porto Alegre, Brazil (191)

Progress in the Application of RNAi for Weed Management. Rubens A. Polito*¹, Vivian Ebeling Viana¹, Edinalvo Rabaioli Camargo¹, Luis A. De Avila²; ¹Federal University of Pelotas, Pelotas, Brazil, ²Mississippi State University, Starkville, MS (192)

Evaluation of Enhanced Herbicide Metabolism as ALS Inhibitor Resistance Mechanism in Annual Bluegrass (*Poa annua* L.). Fernanda Reolon de Souza*¹, Ericmar Santos², Swati Shrestha³, James D. McCurdy⁴, Te-Ming Paul Tseng¹; ¹Mississippi State University – Plant and Soil Sciences Department, Starkville, MS, ²Federal University of Pelotas, Pelotas, Brazil, ³University of Florida, Gainesville, FL, ⁴Mississippi State University, Starkville, MS (193)

Evaluating the Effect of Melatonin on Photosynthetic Parameters of Cotton Treated with 2,4-D. Josiane C. Argenta*¹, Alaina M. Richardson¹, Ncomiwe A. Maphalala², Diogo M. Link¹, Luiza Jacobsen¹, Te-Ming (Paul) Tseng³; ¹Mississippi State University, Starkville, MS, ²Mississippi State University-Department of Plant and Soil Sciences, Starkville, MS, ³Mississippi State University, Mississippi State, MS (194)

Resistance to Acetyl Coenzyme A Carboxylase (ACCase) Inhibitors Among *Lolium multiflorum* Populations: Effect of Multiple Mutations Within the Carboxyl Transferase Domain of ACCase Enzyme. Gulab Rangani*¹, Ana Claudia Langaro², Shilpi Agrawal¹, Nilda Roma-Burgos¹; ¹University of Arkansas, Fayetteville, AR, ²Corteva Agriscience, Nova Mutum, Brazil (195)

POSTER – 11. Soil and Environmental Aspects

***PRESENTER**

Relative Field Emissions of 2,4-D (Enlist) and Dicamba (Engenia) in Soybeans. Joe Beeler*¹, Thomas C. Mueller¹, Larry Steckel²; ¹University of Tennessee, Knoxville, TN, ²University of Tennessee, Jackson, TN (196)

Relative Dicamba Emissions of Status and Engenia When Applied to Corn. Will Phillips*¹, Thomas C. Mueller¹, Larry Steckel²; ¹University of Tennessee, Knoxville, TN, ²University of Tennessee, Jackson, TN (197)

Relative Volatility of S-metolachlor and Pyroxasulfone Under Lab Conditions. Shelby Lanz*, Thomas C. Mueller; University of Tennessee, Knoxville, TN (198)

Amicarbazone and Other Group 5 Herbicide Behavior in Soil Under Field and Laboratory Conditions. Thomas C. Mueller*¹, Ryan S. Henry²; ¹University of Tennessee, Knoxville, TN, ²UPL NA Inc., Fort Wayne, IN (199)

Does Poultry Litter Increase Weed Emergence? A Multi-location Corn Study in Alabama. Akashdeep Singh*, Aniruddha Maity, David P. Russell, Rishi Prasad; Auburn University, Auburn, AL (201)

POSTER – 12. Integrated Weed Management

***PRESENTER**

Weed Suppression and HPLC Analysis of Chlorogenic Acid in Cotton and Cover Crops Via Phytotron Experiments. Alyssa L. Miller*¹, Josiane C. Argenta¹, Varsha Varsha², Ziming Yue³, Te-Ming (Paul) Tseng⁴; ¹Mississippi State University, Starkville, MS, ²Department of Plant and Soil Sciences, Mississippi State University, Starkville, MS, ³MSU, Mississippi State, MS, ⁴Mississippi State University, Mississippi State, MS (202)

Causes for the Spread of Bur Chervil (*Anthriscus caucalis*) as an Arable Weed. Rebecka Duecker*¹, Jean Wagner²; ¹Michigan State University, East Lansing, MI, ²Georg-August Universität Göttingen, Göttingen, Germany (203)

Assessing Alternative Crop Rotation Sequence Effects on Waterhemp (*Amaranthus tuberculatus*) Population Dynamics. Megan R. Czekaj*, John M. Wallace; Pennsylvania State University, State College, PA (204)

Utilizing Reduced Tillage and a Living Mulch for Weed Management in Specialty Crops. Dwayne D. Joseph*; University of Maryland, Chestertown, MD (205)

Model Selection for Mapping Biomass Predictions in Cereal Rye (*Secale cereale* L.). April M. Dobbs*¹, Avi S. Goldsmith¹, Daniel J. Ginn², Søren K. Skovsen³, Muthukumar V. Bagavathiannan², Steven Brian Mirsky⁴, S. Chris Reberg-Horton¹, Ramon G. Leon¹; ¹North Carolina State University, Raleigh, NC, ²Texas A&M University, College Station, TX, ³Aarhus University, Aarhus, Denmark, ⁴USDA ARS, Beltsville, MD (206)

A Survey of Resistance in Cheatgrass (*Bromus tectorum*) in Washington Reveals Multiple-resistant Biotypes. Marija Savic*, Samuel R. Revolinski, Jessica E. R. Kalin, Ian Burke; Washington State University, Pullman, WA (207)

Weed Seed Capture with a Corn Header for Harvest Weed Seed Control. Wyatt J. Stutzman*¹, Michael L. Flessner¹, Michael Walsh²; ¹Virginia Tech, Blacksburg, VA, ²University of Sydney, Narrabri, Australia (208)

Evaluation of Residual Herbicide-Coated Fertilizer in Cotton. Brock A. Dean*¹, Charlie W. Cahoon¹, Zachary R. Taylor², Jose H. de Sanctis¹, Jacob C. Forehand³, James H. Lee¹; ¹North Carolina State University, Raleigh, NC, ²North Carolina State University, Sanford, NC, ³North Carolina State University, Raleigh, NC (209)

Weed Surveys: Unmanned Aerial Vehicles and Camera Payloads. Reginald Fletcher*; United States Department of Agriculture, Agricultural Research Service, Stoneville, MS (210)

Integration of Cover Crops and Herbicides for Weed Management in Cotton. Andrew J. Price*¹, Annu Kumari²; ¹USDA-ARS-NSDL, Auburn, AL, ²Crop, Soil & Environmental Sciences Department, Auburn University, Auburn, AL (211)

Potential Living Mulch Species for Weed Suppression in Texas Cotton. Gustavo Camargo Silva*¹, Muthukumar V. Bagavathiannan²; ¹Texas A&M University, Department of Soil and Crop Sciences, College Station, TX, ²Texas A&M University, College Station, TX (212)

HRAC Herbicide Mode of Action Classification 2024. Jens Lerchl*¹, Roland S. Beffa², Caio Rossi³; ¹BASF SE, Limburgerhof, Germany, ²Senior Scientist Consultant, Frankfurt, Germany, ³Corteva Agriscience // HRAC Global, Uberlandia, Brazil (213)

Statewide Screen of Italian Ryegrass (*Lolium multiflorum*) Populations with Residual Herbicides in North Carolina.

Diego J. Contreras*, Jackson W. Alsdorf, Ronel J. Argueta, Edgar A. Posadas, Wesley Everman; North Carolina State University, Raleigh, NC (214)

North Carolina Survey of Herbicide Resistant Palmer Amaranth Populations. Jackson W. Alsdorf*, Diego J. Contreras, Ronel J. Argueta, Wesley Everman; North Carolina State University, Raleigh, NC (215)

Cytochrome P450 (CYP72A14) Overexpression Contributes to Junglerice (*Echinochloa colona*) Cross-resistant to Quinclorac and Florpyrauxifen-benzyl. Juan Camilo Velásquez R*¹, Nilda Roma-Burgos¹, Gulab Rangani¹, Prakriti Dhaka², Felipe Keller-Salto³, Matheus Machado Nogueira¹; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³Intern student, Fayetteville, AR (216)

Null Models for Evaluating Interactions Between Cover Crop and Herbicide Effects on Weed Population Level Responses. John M. Wallace*¹, Jared S. Adam²; ¹Pennsylvania State University, State College, PA, ²Pennsylvania State University/ Weed Science, State College, PA (217)

Utilization of Cover Crop Roller Crimping for Viable Weed Control and Soil Health Improvement. Alaina M. Richardson*¹, Worlanyo Segbefia², Ncomiwe A. Maphalala³, Dante Elias¹, Aricia Ritter Correa¹, Alyssa L. Miller¹, Sabrina Sastre¹, Te-Ming (Paul) Tseng⁴; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Plant and Soil Science Department, Starkville, MS, ³Mississippi State University-Department of Plant and Soil Sciences, Starkville, MS, ⁴Mississippi State University, Mississippi State, MS (218)

Response of Inoculated Soybean Seed to Corn Residual Herbicides: Impact on Germination. Ncomiwe A. Maphalala*¹, Alaina M. Richardson², Aricia Ritter Correa², Sabrina Sastre², Te-Ming (Paul) Tseng³; ¹Mississippi State University-Department of Plant and Soil Sciences, Starkville, MS, ²Mississippi State University, Starkville, MS, ³Mississippi State University, Mississippi State, MS (219)

Wheat-Soybean Relay Intercropping in Arkansas: Preliminary Insights on Palmer Amaranth Suppression and Crop Yields. Amar S. Godar*, Jason K. Norsworthy, Leonard B. Piveta; University of Arkansas, Fayetteville, AR (220)

POSTER – 17. Targeted and Autonomous Weed Control Technologies

***PRESENTER**

The Blue River Technology Agronomy Test Machine Small-Plot Research Program. Lauren M. Lazaro*¹, Michael M. Houston², William L. Patzoldt¹; ¹Blue River Technology, Sunnyvale, CA, ²Blue River Technology, Greenville, MS (221)

Drone Application of Pre-harvest Soybean Desiccants. Antonio Augusto Tavares*¹, Jake A. Patterson¹, Michael Althman¹, Sydney C. Baker¹, Luis A. Avila², Darrin M. Dodds³; ¹Mississippi State University, Starkville, MS, ²Universidade Federal de Pelotas, Pelotas, Brazil, ³Mississippi State University, Mississippi State, MS (222)

Comparing the Performance and Robustness of Multi-modal Deep Learning for Cover Crop and Weed Biomass Estimation. Joe Johnson*¹, Ram Ray², Ramon G. Leon³, Chris Reberg-Horton³, Steven Brian Mirsky⁴, Muthukumar V. Bagavathiannan⁵; ¹Soil and Crop Sciences, Texas A&M University, College Station, TX, ²Prairie View A&M University, Prairie View, TX, ³North Carolina State University, Raleigh, NC, ⁴USDA ARS, Beltsville, MD, ⁵Texas A&M University, College Station, TX (223)

WATTS UP! Exploring Soil Applied Pulse Electric Field as an Alternative to Methyl Bromide. Tatiana Benedetti, Pamela Medeiros dos Santos, Marcelo L. Moretti*; Oregon State University, Corvallis, OR (224)

Site-Specific Treatment of Weed Escapes in Cotton Using a Remotely Piloted Aerial Application System. Ubaldo Torres*¹, Daniel E. Martin², Bholuram Gurjar¹, Bishwa B. Sapkota¹, Matthew Kutugata³, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²United States Department of Agriculture, College Station, TX, ³Texas A&M, College Station, TX (225)

Developing a National Image Repository for Weeds, Cover Crops, and Cash Crops. Matthew Kutugata¹, Chris Reberg Horton², Navjot Singh*¹, Søren K. Skovsen³, Maria Laura Cangiano², Muthukumar V. Bagavathiannan⁴, Steven Brian Mirsky⁵; ¹Texas A&M, College Station, TX, ²NCSU, Raleigh, NC, ³Aarhus University, Aarhus, Denmark, ⁴Texas A&M University, College Station, TX, ⁵USDA ARS, Beltsville, MD (226)

TUESDAY MORNING JANUARY 23

Judges Workroom

LOCATION: Mesquite
TIME: 8:00 AM – 5:00 PM Central
Time

TUESDAY MORNING JANUARY 23

ORAL – WSSA SST

LOCATION: Regency G
TIME: 9:00 AM – 12:00 PM Central
Time
CHAIR: Marty Schraer
Syngenta
Meridian, ID

***SPEAKER † STUDENT CONTEST**

09:00 AM †Length of Residual Herbicides in Xtend Soybean System. Karina Beneton*, Jennifer Dudak, Zachary R. Treadway, Todd A. Baughman; Oklahoma State University, Ardmore, OK (227)

09:05 AM †Cover Crops: a Weed Management Option in Plasticulture Strawberry Row-Middles. Jeanine Arana*¹, Stephen L. Meyers², Wenjing Guan³; ¹Purdue University/Horticulture, West Lafayette, IN, ²Purdue University, West Lafayette, IN, ³Purdue University, Bloomington, IN (228)

09:10 AM †Utility of John Deere's See & Spray™ Ultimate in Southern U.S. Row Crops. Tristen H. Avent*¹, Jason K. Norsworthy¹, William L. Patzoldt², Lauren M. Lazaro²; ¹University of Arkansas, Fayetteville, AR, ²Blue River Technology, Sunnyvale, CA (229)

09:15 AM †Cereal Cover Crops and Herbicides for Integrated Weed Management in Dry Bean. Prayusha Bhattarai*¹, Albert T. Adjesiwor², Olga

Walsh³; ¹University of Idaho, Twin Falls, ID, ²University of Idaho, Kimberly, ID, ³University of Idaho, Parma, ID (230)

- 09:20 AM †Is Glufosinate-Resistant Palmer Amaranth Spreading in Northeast Arkansas?** Pamela Carvalho-Moore^{*1}, Jason K. Norsworthy¹, Maria Carolina C R Souza², Fidel Gonzalez Torralva¹, Rodrigo Botelho³; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³University of Arkansas, Fayetteville, Brazil (231)
- 09:25 AM †Impact of Growing Cover Crops on Weed Suppression, Crop Yields, and Profitability in Semiarid Great Plains.** Sachin Dhanda^{*1}, Vipin Kumar², Anita Dille³, Augustine Obour³, Elizabeth Yeager³, Johnathan Holman³; ¹Kansas State University, Hays, KS, ²Cornell University, Ithaca, NY, ³Kansas State University, Manhattan, KS (232)
- 09:30 AM †A Blue Light Shot in the Dark: Impact on Weed Seeds.** Sarah A.d. Chu^{*1}, Sarah E. Kezar², Shuyang Zhen¹, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Cornell University, Ithaca, NY (233)
- 09:35 AM †Fall Application of Soil Residual Herbicides Reduces Weed Abundance in Spring-Planted Chickpeas.** Akamjot Brar^{*1}, Qasim Khan², Fabian Menalled¹, Zach Miller³, Clint W. Beiermann⁴, Lovreet S. Shergill², Kent McVay²; ¹Montana State University, Bozeman, MT, ²Montana State University, Huntley, MT, ³Montana State University, Corvallis, MT, ⁴University of Nebraska-Lincoln, Scottsbluff, NE (234)
- 09:40 AM †Tetflupyrolimet Targets a Novel Site for Barnyardgrass Management in Rice.** Mason C. Castner^{*1}, Jason K. Norsworthy¹, Richard M. Edmund², Tristen H. Avent¹, Samuel C. Noe³; ¹University of Arkansas, Fayetteville, AR, ²FMC, Little Rock, AR, ³University of Arkansas, Fayetteville, KY (235)
- 09:45 AM †Cover Crops for Weed Management: is it Worth Implementing in the Upper Midwest?** Eric Y. Yu^{*1}, William Lazarus¹, Axel Garcia y Garcia², Lizabeth Stahl³, Ryan P. Miller⁴, Gregg Johnson⁵, Ce Yang¹, Debalin Sarangi¹; ¹University of Minnesota, St. Paul, MN, ²University of Minnesota, Lamberton, MN, ³University of

Minnesota Extension, Worthington, MN,
⁴University of Minnesota, Rochester, MN,
⁵University of Minnesota, Waseca, MN (236)

- 09:50 AM †Shining A Light on Weed Control: Investigating Directed Energy as a Non-chemical Weed Control Tactic.** Ryan C. Hamberg*¹, Jon Jackson², Neil Sater², Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Global Neighbor Inc., Xenia, OH (237)
- 09:55 AM Break**
- 10:10 AM †Evaluation of Critical Weed-free Period for Three Sweetpotato (*Ipomoea batatas*) Cultivars.** Emmanuel G. Cooper*¹, Stephen L. Meyers¹, Jeanine Arana²; ¹Purdue University, West Lafayette, IN, ²Purdue University/Horticulture, West Lafayette, IN (238)
- 10:15 AM †Enhancing Herbicide Resistance by Manipulating a Transcription Factor.** Srishti Gupta*, Franck E. Dayan; Colorado State University, Fort Collins, CO (239)
- 10:20 AM †*Typha latifolia* Invasion and Management in California.** Deniz Inci*¹, Michelle Leinfelder-Miles², Kassim Al-Khatib¹; ¹University of California Davis, Davis, CA, ²University of California Cooperative Extension, Stockton, CA (240)
- 10:25 AM †AI And GNSS Integration for Precision Nutsedge (*Cyperus Spp.*) Mapping.** Alex Rodriguez*¹, Renato Herrig Furlanetto², Arnold W. Schumann³, Amr Abd-Elrahman⁴, Nathan Boyd⁵; ¹University of Florida / Horticultural Sciences Department, Wimauma, FL, ²University of Florida, Wimauma, FL, ³University of Florida, Lake Alfred, FL, ⁴University of Florida, Plant City, FL, ⁵University of Florida, Balm, FL (241)
- 10:30 AM †Optimizing Application Timing of Residual Herbicides in a Planted Green Soybean System.** Megan R. Czekaj*¹, Mark VanGessel², Michael L. Flessner³, John M. Wallace¹; ¹Pennsylvania State University, State College, PA, ²University of Delaware, Georgetown, DE, ³Virginia Tech, Blacksburg, VA (242)
- 10:35 AM †Subtelomeric *EPSPS* Duplications Confer Glyphosate Resistance in *Eleusine indica* (Goosegrass).** Nicholas A. Johnson*¹, Nathan D.

Hall², Chun Zhang³, Qin Yu⁴, Eric L. Patterson¹;
¹Michigan State University, East Lansing, MI,
²Michigan State, East Lansing, MI, ³Guangdong
 Academy of Agricultural Sciences, Guangzhou,
 China, ⁴University of Western Australia, Perth,
 Australia (243)

10:40 AM †**Inter-seeding Oat (*Avena sativa* L.) in Soybean for Management of Herbicide-resistant Weeds.** Vipin Kumar*, Amit J. Jhala; University of Nebraska-Lincoln, Lincoln, NE (244)

10:45 AM †**Effect of Relative Humidity on Glufosinate Efficacy in Kochia (*Bassia scoparia*) and Common Lambsquarters (*Chenopodium album*) Populations.** Het Samir Desai*¹, Fabian Menalled¹, Lovreet S. Shergill²; ¹Montana State University, Bozeman, MT, ²Montana State University, Huntley, MT (245)

10:50 AM †**Quantifying the Impact of Palmer Amaranth (*Amaranthus Palmeri*) Escapes in Furrow-Irrigated Rice: Yield Loss Vs. Seedbank Management.** Tanner A. King*¹, Jason K. Norsworthy², Maria Carolina C R Souza³, Summer L. Pritchett⁴, Leonard B. Piveta², Tom Barber⁵, Thomas R. Butts⁵; ¹University of Arkansas Division of Agriculture, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³University of Arkansas, Fayetteville, AR, ⁴University of Arkansas Department of Crop, Soil, and Environmental Science, Fayetteville, AR, ⁵University of Arkansas, Lonoke, AR (246)

10:55 AM †**Dissecting Metabolic Resistance in *Poa annua*.** Mohit Mahey*, Eric L. Patterson, Jinyi Chen, Peter Knut Lundquist; Michigan state university, East Lansing, MI (247)

11:00 AM †**Weed Seed Bank Control in Rotational Crops for Proactive Herbicide Resistance Management.** Chandra L. Montgomery*¹, Albert T. Adjesiwor²; ¹University of Idaho, Moscow, ID, ²University of Idaho, Kimberly, ID (248)

11:05 AM †**Investigating the Effects of Preemergence Herbicides on Spring Beauty (*Claytonia virginica* L.) Growth in Flowering Turfgrass Lawns.** Nikolay Minaev*¹, James D. McCurdy², Edicarlos B. De Castro²; ¹Mississippi State University, Mississippi State, MS, ²Mississippi State University, Starkville, MS (249)

- 11:10 AM** †**The Management of Italian Ryegrass (*Lolium perenne* ssp. *Multiflorum*) in Winter Wheat Using a Seed Control Unit at Harvest.** Hayden S. Love*¹, Travis Legleiter²; ¹The University of Kentucky, Lexington, KY, ²University of Kentucky, Princeton, KY (250)
- 11:15 AM** †**The Influence of Climate Change on the Distribution of Allergy-Inducing Plants in the United States.** Venkatanaga Shiva Datta Kumar Sharma Chiruvelli*¹, Debalin Sarangi², David Moeller³, Ryan Briscoe Runquist⁴; ¹Graduate Student – Agronomy Department, University of Minnesota, St Paul, MN, ²University of Minnesota, St. Paul, MN, ³Professor, Twin Cities, MN, ⁴Research Associate, Twin Cities, MN (251)
- 11:20 AM** †**Factors Influencing Off-Target Movement of Drone Application.** Antonio Augusto Tavares*¹, Jake A. Patterson¹, Sydney C. Baker¹, Luiza Jacobsen¹, Darrin M. Dodds², Luis A. Avila³; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Mississippi State, MS, ³Universidade Federal de Pelotas, Pelotas, Brazil (252)
- 11:25 AM** †**Genetic Analysis of Colombian Coca Plants in Response to Glyphosate.** Yenny Alejandra Saavedra Rojas*¹, Eric L. Patterson², Jhon Eric Rivera Monroy³; ¹Michigan State University, Department of Plant, Soil and Microbial Sciences, Fulbright. Visiting student researcher, East Lansing, MI, ²Michigan State University, East Lansing, MI, ³University of La Salle, Bogota, Colombia (253)
- 11:30 AM** †**Tracking ALS Resistance in Barnyardgrass (*Echinochloa crus-galli*) Using Molecular Markers in Southern Brazil Rice Fields.** Eduardo C. Rudell*¹, Luan Cutti², Guilherme M. Turra³, Matheus B. Scherer⁴, Gabriel M. Dias³, Vinicius Tasca³, Catarine Markus², Eric L. Patterson⁵, Aldo Merotto²; ¹Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil, ²Federal University of Rio Grande do Sul, Porto Alegre, Brazil, ³UFRGS, Porto Alegre, Brazil, ⁴BASF, Porto Alegre, Brazil, ⁵Michigan State University, East Lansing, MI (254)
- 11:35 AM** †**Khakiweed (*Alternanthera pungens*) Seed Physiology Response.** Annabelle E. McEachin*¹, Timothy L. Grey², Nicholas T. Basinger³; ¹University of Georgia Crop and Soil Sciences,

Tifton, GA, ²University of Georgia, Tifton, GA,
³University of Georgia, Athens, GA (255)

- 11:40 AM** †**Grain Sorghum Response to Fomesafen and Terbacil.** Nicholas J. Shay*, Eric P. Prostko; University of Georgia, Tifton, GA (256)
- 11:45 AM** †**Axant™ Flex Cotton Response to Topramezone.** Megan M. Singletary*¹, Peter A. Dotray², Gregory B. Baldwin³, Scott Asher⁴, Adam C. Hixson⁴, Bobby A. Rodriguez⁵; ¹Texas Tech University, Lubbock, TX, ²Texas Tech University/ Texas A&M AgriLife Research and Extension, Lubbock, TX, ³BASF, Research Triangle Park, NC, ⁴BASF, Lubbock, TX, ⁵Texas A&M AgriLife Research and Extension Service, Lubbock, TX (257)
- 11:50 AM** †**Weed Control with Fomesafen Tank-Mixes in Oklahoma Cotton.** Zachary R. Treadway*, Jennifer Dudak, Karina Beneton, Todd A. Baughman; Oklahoma State University, Ardmore, OK (258)
- 11:55 AM** †**Cover Crop Tolerance to Spring-Applied Wheat Herbicides.** Claudia R. Walz*, Christy L. Sprague; Michigan State University, East Lansing, MI (259)

TUESDAY MORNING JANUARY 23

ORAL – SWSS Student Contest MS 1 & PhD 1

LOCATION: Nueces
TIME: 9:00 AM – 2:45 PM Central
Time
CHAIR: Pratap Devkota
Syngenta
Vero Beach, FL

***SPEAKER † STUDENT CONTEST**

- 09:00 AM** †**The Evaluation of Dodhylex in Mississippi Rice Production.** Dalton R. Whitt*¹, Hunter D. Bowman², Jason A. Bond³, Taylor D. Burrell II³, Thomas W. Eubank⁴, Gregory A. Mangialardi⁵;
¹Mississippi State University, Leland, MS,
²Mississippi State University, Starkville, MS,

³Mississippi State University, Stoneville, MS,
⁴Mississippi State University, Greenville, MS,
⁵Mississippi State University, Shelby, MS (260)

- 09:15 AM †Alternative Herbicide Options to Paraquat for Weed Control in Mississippi Row Crops.** Gregory A. Mangialardi*¹, Jason A. Bond², Tom W. Allen³, Trent J. Irby⁴, Luis A. Avila⁴, Thomas W. Eubank⁵, Whitney D. Crow⁴, Hunter D. Bowman⁴; ¹Mississippi State University, Shelby, MS, ²Mississippi State University, Stoneville, MS, ³Mississippi State University, Cleveland, MS, ⁴Mississippi State University, Starkville, MS, ⁵Mississippi State University, Greenville, MS (261)
- 09:30 AM †Glyphosate-Resistant Italian Ryegrass Control with Mixtures of Residual Herbicides.** Jacob B. Dodd*¹, Jason A. Bond², Taylor D. Burrell II², Thomas W. Eubank³, Gregory A. Mangialardi⁴; ¹Mississippi State University, Sunflower, MS, ²Mississippi State University, Stoneville, MS, ³Mississippi State University, Greenville, MS, ⁴Mississippi State University, Shelby, MS (262)
- 09:45 AM †Evaluation of Oxyfluorfen in a Furrow Irrigated ‘ROXY’ Rice Production System.** Thomas W. Eubank*¹, Jason A. Bond², Hunter D. Bowman³, Taylor D. Burrell II², Gregory A. Mangialardi⁴, Dalton R. Whitt⁵; ¹Mississippi State University, Greenville, MS, ²Mississippi State University, Stoneville, MS, ³Mississippi State University, Starkville, MS, ⁴Mississippi State University, Shelby, MS, ⁵Mississippi State University, Leland, MS (263)
- 10:00 AM Break**
- 10:15 AM †Optimizing Pyroxasulfone-Coated Granular Ammonium Sulfate for Cotton Production Systems.** Brock A. Dean*¹, Charlie W. Cahoon¹, Zachary R. Taylor², Jose H. de Sanctis¹, Jacob C. Forehand³, James H. Lee¹; ¹North Carolina State University, Raleigh, NC, ²North Carolina State University, Sanford, NC, ³North Carolina State University, Raleigh, NC (264)
- 10:30 AM †Herbicide Performance of Alite 27 in Axant™ Flex Cotton Systems.** Jennifer Dudak*¹, Zachary R. Treadway¹, Todd A. Baughman¹, Greg Baldwin², Tom Barber³, Charlie W. Cahoon⁴, A Stanley Culpepper⁵, Benjamin McKnight⁶, Scott A. Nolte⁷, Adam C. Hixson⁸; ¹Oklahoma State University, Ardmore, OK, ²BASF, Research

Triangle Park, NC, ³University of Arkansas, Lonoke, AR, ⁴North Carolina State University, Raleigh, NC, ⁵University of Georgia, Tifton, GA, ⁶Texas A&M AgriLife Extension Service, College Station, TX, ⁷Texas A&M AgriLife Extension, College Station, TX, ⁸BASF, Lubbock, TX (265)

10:45 AM **†Injury, Growth, and Yield Following the Co-Application of Group 15 and Non-Selective Herbicides on One-Leaf 2,4-D- and Dicamba Tolerant Cotton (*Gossypium hirsutum* L.).** Logan N. Vallee*¹, Daniel O. Stephenson, IV², Connor Webster¹; ¹LSU AgCenter, Baton Rouge, LA, ²LSU Ag Center, Alexandria, LA (266)

11:00 AM **†Peanut Response to Herbicides as Influenced by Injury Caused by Thrips.** Ethan Foote*, David L. Jordan; North Carolina State University, Raleigh, NC (267)

11:15 AM **†Evaluation of Application Timing of a Diflufenican Premixture for Soybean Tolerance and Weed Control.** Matthew C. Woolard*¹, Jason K. Norsworthy¹, Mason C. Castner¹, Tanner A. King², Leonard B. Piveta¹, Thomas R. Butts³, Tom Barber³; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas Division of Agriculture, Fayetteville, AR, ³University of Arkansas, Lonoke, AR (268)

11:30 AM **†Rice Performance Following Exposure to Sub-lethal Concentrations of Paraquat at Multiple Growth Stages.** Mary Jane Lytle*¹, Tameka L. Sanders², Hunter D. Bowman³, Jason A. Bond¹; ¹Mississippi State University, Stoneville, MS, ²Mississippi State University: Delta Research & Extension Center, Stoneville, MS, ³Mississippi State University, Starkville, MS (269)

11:45 AM **†Effectiveness of Herbicide-Coated Fertilizers in Cotton.** Summer L. Linn*¹, Jason K. Norsworthy², Samuel C. Noe³, Jeong-In Hwang², Mason C. Castner², Maria Carolina C R Souza⁴, Tom Barber⁵; ¹University of Arkansas Department of Crop, Soil, and Environmental Science, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³University of Arkansas, Fayetteville, AR, ⁴University of Arkansas, Fayetteville, AR, ⁵University of Arkansas, (270)

12:00 PM **Lunch**

- 01:00 PM †*Amaranthus palmeri* Control and Axant Flex™ Cotton Response Following Isoxaflutole.**
Maxwell E. Smith*¹, Peter A. Dotray², Adam C. Hixson³; ¹Oklahoma State University, Altus, OK, ²Texas Tech University/ Texas A&M AgriLife Research and Extension, Lubbock, TX, ³BASF, Lubbock, TX (271)
- 01:15 PM †Evaluation of Tetflupyrolimet and Clomazone Mixtures on a Crowley Silt Loam Soil.** Maranda P. Arcement*, Connor Webster, John A. Williams, Wesley B. Carr, Steven B. Stoker, Logan N. Vallee; LSU AgCenter, Baton Rouge, LA (272)
- 01:30 PM †Evaluating Cover Crops and Herbicides for Weed Control in Soybean.** Annu Kumari*¹, Andrew J. Price², Steve Li³; ¹Crop, Soil & Environmental Sciences Department, Auburn University, Auburn, AL, ²USDA-ARS-NSDL, Auburn, AL, ³Auburn University, Auburn, AL (273)
- 01:45 PM †Assessment of Prohexadione Calcium Tank-Mixed with Postemergence Peanut Herbicides.** Samantha J. Bowen*¹, Kayla M. Eason², Walter S. Monfort¹, Timothy L. Grey¹; ¹University of Georgia, Tifton, GA, ²United States Department of Agriculture, Tifton, GA (274)
- 02:00 PM †Cover Crops and Fall-applied Residual Herbicides for Managing Herbicide-resistant Italian Ryegrass in North Carolina.** Jose H. de Sanctis*¹, Charlie W. Cahoon¹, Wesley Everman¹, Travis W. Gannon¹, Katie M. Jennings¹, Zachary R. Taylor², Brock A. Dean¹, Jacob C. Forehand³, James H. Lee¹; ¹North Carolina State University, Raleigh, NC, ²North Carolina State University, Sanford, NC, ³North Carolina State University, Raleigh, NC (275)
- 02:15 PM †The Impact of Overcast Weather on Provisia Rice Injury Before and After Quizalofop Applications.** Wesley B. Carr*, Connor Webster, John A. Williams, Maranda P. Arcement, Steven B. Stoker, Logan N. Vallee; LSU AgCenter, Baton Rouge, LA (276)
- 02:30 PM Meeting**

TUESDAY MORNING JANUARY 23

ORAL – SWSS 15-minute oral MS 2 & PhD 2

LOCATION: Frio
TIME: 9:00 AM – 2:45 AM Central
Time
CHAIR: Pratap Devkota
Syngenta
Vero Beach, FL

***SPEAKER † STUDENT CONTEST**

- 09:00 AM †The Influence of Cotton Seed Quality on PRE Herbicide Tolerance.** Jacob C. Forehand*¹, Charlie W. Cahoon², Guy Collins³, Keith L. Edmisten⁴, Lori Snyder¹, Zachary R. Taylor⁵, Brock A. Dean², James H. Lee², Jose H. de Sanctis², Michael Phillips¹; ¹North Carolina State university, Raleigh, NC, ²North Carolina State University, Raleigh, NC, ³North Carolina State university, Bailey, NC, ⁴NC State University, Cary Nc, NC, ⁵North Carolina State University, Sanford, NC (277)
- 09:15 AM †Zoisia Spp. Putting Green Tolerance to Post-emergent Herbicides.** Benjamin D. Pritchard*¹, Gregory K. Breeden², James Brosnan³, Weston Floyd⁴, Chase Straw⁴, Eric H. Reasor⁵; ¹University of Tennessee Knoxville, Knoxville, TN, ²University of Tennessee, Knoxville, TN, ³Univeristy of Tennessee, Knoxville, TN, ⁴Texas A&M, College Station, TX, ⁵PBI Gordon, Dallas, TX (278)
- 09:30 AM †Investigating Herbicide Tolerance on *Cosmos bippanatus*.** James H. Lee*¹, Brock A. Dean¹, Charlie W. Cahoon¹, Jacob C. Forehand², Zachary R. Taylor³, Jose H. de Sanctis¹; ¹North Carolina state university, Raleigh, NC, ²North Carolina State university, Raleigh, NC, ³North Carolina State University, Sanford, NC (279)
- 09:45 AM †Crabgrass and Texas Panicum Control with Group 15 Herbicides Applied Preemergence.** Livia Pereira*, Steve Li; Auburn University, Auburn, AL (280)
- 10:00 AM Break**

- 10:15 AM** †**North Carolina Survey of Herbicide Resistant Italian Ryegrass Populations.** Jackson W. Alsdorf*, Diego J. Contreras, Ronel J. Argueta, Wesley Everman; North Carolina State University, Raleigh, NC (281)
- 10:30 AM** †**Investigating Triclopyr Drift Under Roadside Conditions.** Estefania Gomiero Polli*, Travis W. Gannon, Mathieu C. LeCompte, Ronald R. Rogers, Khalied Ahmed; North Carolina State University, Raleigh, NC (282)
- 10:45 AM** †**Assessing Injury and Physiological Response of Black-eyed Susan (*Rudbeckia hirta*) Treated with Common Roadside Herbicides.** Rachel C. Woody-Pumford*¹, Matthew B. Bertucci¹, Mike D. Richardson¹, Dirk Philipp¹, Hannah E. Wright-Smith²; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Little Rock, AR (283)
- 11:00 AM** †**Anaerobic Soil Disinfestation: a Promising Method to Manage Weeds and Nematodes in Sweetpotato.** Simardeep Singh*¹, Matthew A. Cutulle², Churamani Khanal³; ¹Clemson University, Central, SC, ²Clemson University, Charleston, SC, ³Clemson University, Clemson, SC (284)
- 11:15 AM** †**Pre-emergent Herbicide Application Timing for Management of Annual Foxtail (*Setaria*) in Bermudagrass Pasture.** Charles E. Smith III*¹, Michael C. Boccz², Hannah C. Lindell², Maria L. Zaccaro-Gruener¹, Nicholas T. Basinger²; ¹University of Georgia Crop and Soil Sciences, Athens, GA, ²University of Georgia, Athens, GA (285)
- 11:30 AM** †**Effect of Application Timing of the Weed Zapper on Palmer Amaranth (*Amaranthus palmeri*) Control and Sweetpotato Yield and Quality.** Colton D. Blankenship*¹, Katherine M. Jennings¹, David W. Monks¹, David L. Jordan¹, Charlie W. Cahoon¹, Nicholas T. Basinger², Jerry J. Baron³; ¹North Carolina State University, Raleigh, NC, ²University of Georgia, Athens, GA, ³IR-4 HQ, NC State University, Raleigh, NC (286)
- 11:45 AM** †**Effect of Transplant Type on Sweetpotato (*Ipomoea batatas*) Tolerance to Herbicides.** Samuel E. Crawford*, Katherine M. Jennings, David W. Monks, David L. Jordan, Jonathan R. Schultheis, Adrienne M. Gorny, Levi D. Moore,

Stephen J. Ippolito; North Carolina State University, Raleigh, NC (287)

12:00 PM Lunch

01:00 PM †Database Development Workflow and Comparison of Different Annotation Methods for Weed Detection in Turfgrass Systems. Mikerly M. Joseph*¹, Chang Zhao¹, Arnold W. Schumann², Nathan Boyd³, Pawel Petelewicz¹; ¹University of Florida, Gainesville, FL, ²University of Florida, Lake Alfred, FL, ³University of Florida, Balm, FL (288)

01:15 PM †Cover Crop Allelopathy: A Sustainable Weed Management Strategy in Sweet Potato. Alaina M. Richardson*¹, Alyssa L. Miller¹, Worlanyo Segbefia², Ncomiwe A. Maphalala³, Dante Elias¹, Aricia Ritter Correa¹, Josiane C. Argenta¹, Sabrina Sastre¹, Tabata M. Oliveira⁴, Te-Ming (Paul) Tseng⁵; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Plant and Soil Science Department, Starkville, MS, ³Mississippi State University-Department of Plant and Soil Sciences, Starkville, MS, ⁴MSU, Starkville, MS, ⁵Mississippi State University, Mississippi State, MS (289)

01:30 PM †Identification of Non-Target Site Resistance Mechanisms in Annual Bluegrass (*Poa annua* L.). Ronald R. Rogers*, Travis W. Gannon, Mathieu C. LeCompte, Estefania Gomiero Polli, Khalied Ahmed; North Carolina State University, Raleigh, NC (290)

01:45 PM †Endozoochorous Seed Dispersal Potential of Dominant Southern Weeds. Akashdeep Singh*, Aniruddha Maity, David P. Russell, Brandon Smith; Auburn University, Auburn, AL (291)

02:00 PM †Dual Purpose Cover Crop-Living Mulch System for Weed Suppression in Cotton. Gustavo Camargo Silva*¹, Muthukumar V. Bagavathiannan²; ¹Texas A&M University, Department of Soil and Crop Sciences, College Station, TX, ²Texas A&M University, College Station, TX (292)

02:15 PM †Row Direction-dependent Light Exposure and Mulching Can Improve Weed Suppression and Yield in Peanut. Ankit Yadav*, David P. Russell, Aniruddha Maity; Auburn University, Auburn, AL (293)

TUESDAY MORNING JANUARY 23

ORAL – SWSS student contest MS 3, PhD 3, & PhD 4

LOCATION: Blanco
TIME: 9:00 AM – 5:00 PM Central Time
MODERATOR: Pratap Devkota
Syngenta
Vero Beach, FL

***SPEAKER † STUDENT CONTEST**

- 09:00 AM †Sheep as a Potential Tool for In-Season Cotton Weed Management.** Matthew C. Stewart*; Texas A&M University, College Station, TX (294)
- 09:15 AM †Evaluating the Integrated Harrington Seed Destructor for Use in Virginia Soybean Production.** Eli C. Russell*, Kevin Bamber, Matthew P. Spoth, Michael L. Flessner; Virginia Tech, Blacksburg, VA (295)
- 09:30 AM †Tillage Type and Enlist® Technology: Evaluating Weed Specie Shift in Georgia Field Corn.** Hannah C. Lindell*¹, Charles E. Smith¹, Michael C. Bocz¹, Timothy L. Grey², Nicholas T. Basinger¹; ¹University of Georgia, Athens, GA, ²University of Georgia, Tifton, GA (296)
- 09:45 AM †Pre-Harvest Morningglory Desiccation in Corn Using Sprayer Drone Technology.** Thiago Bento Caputti*¹, Livia Ianhez Pereira², Steve Li¹; ¹Auburn University, Auburn, AL, ²University of Nebraska-Lincoln, North Platte, NE (297)
- 10:00 AM Break**
- 10:15 AM †Spray Deposition Pattern and Weed Control Efficacy of Multipass UAV and Ground Applications.** Daewon Koo*, Navdeep Godara, Juan Romero, Shawn Askew; Virginia Tech, Blacksburg, VA (298)

- 10:30 AM** †**Elevated Temperature and CO₂ Effects on Epicuticular Waxes of Glyphosate-Resistant and Susceptible Palmer Amaranth (*Amaranthus palmeri*) Biotypes.** Juliana de Souza Rodrigues*¹, Oliva Pisani², Daniel Patrick Liebert², Timothy L. Grey³; ¹University of Georgia/Department of Crop and Soil Science, Tifton, GA, ²U.S. Department of Agriculture – Southeast Watershed Research Lab, Tifton, GA, ³University of Georgia, Tifton, GA (299)
- 10:45 AM** †**Early Identification of Plant Diseases Through Deep-learning Computer Vision Models for Low Cost Drones.** Prosenjit Kumar Ghosh¹, Md Irfan Khan*², Aaditya Khanal², Prabha Sundaravadivel³, Reginald Fletcher⁴, Krishna Reddy⁴; ¹Dept of Electrical and Computer Engineering, The University of Texas at Tyler, Tyler, TX, ²Jasper Dept of Chemical Engineering, The University of Texas at Tyler, Tyler, TX, ³The University of Texas at Tyler, Tyler, TX, ⁴United States Department of Agriculture, Agricultural Research Service, Stoneville, MS (300)
- 11:00 AM** †**Mapping Predicted Biomass in Rye Using 3-D Imaging.** April M. Dobbs*¹, Avi S. Goldsmith¹, Daniel J. Ginn², Søren K. Skovsen³, Muthukumar V. Bagavathiannan², Steven Brian Mirsky⁴, S. Chris Reberg-Horton¹, Ramon G. Leon¹; ¹North Carolina State University, Raleigh, NC, ²Texas A&M University, College Station, TX, ³Aarhus University, Aarhus, Denmark, ⁴USDA ARS, Beltsville, MD (301)
- 11:15 AM** †**Updating the Critical Period of Weed Control in Soybean [*Glycine max* (L.) Merr.].** Steven B. Stoker*¹, Daniel O. Stephenson, IV², Connor Webster¹; ¹LSU AgCenter, Baton Rouge, LA, ²LSU Ag Center, Alexandria, LA (302)
- 11:30 AM** †**Precision Weed Detection and Management Using Mini-Robots.** Aryan Anand*¹, Maliha Kabir¹, Prabha Sundaravadivel², Krishna Reddy³, Reginald Fletcher³; ¹Dept. of Electrical and Computer Engineering, The University of Texas at Tyler, Tyler, TX, ²The University of Texas at Tyler, Tyler, TX, ³United States Department of Agriculture, Agricultural Research Service, Stoneville, MS (303)
- 11:45 AM** †**Effects of Boom Height and Nozzle Combinations in See & Spray™? Applications**

on Weed Control in Soybean. Wyatt J. Stutzman*¹, Tristen H. Avent², Jared Buck³, Diego J. Contreras⁴, Wesley Everman⁴, Michael M. Houston⁵, Lauren M. Lazaro⁶, Jason K. Norsworthy², William L. Patzoldt⁶, Julie L. Reeves⁷, Larry Steckel³, Michael L. Flessner¹; ¹Virginia Tech, Blacksburg, VA, ²University of Arkansas, Fayetteville, AR, ³University of Tennessee, Jackson, TN, ⁴North Carolina State University, Raleigh, NC, ⁵Blue River Technology, Greenville, MS, ⁶Blue River Technology, Sunnyvale, CA, ⁷The University of Tennessee, Jackson, TN (304)

12:00 PM Lunch

01:00 PM †Field Evaluation of Salinity Tolerance and Weed Competitiveness of Lowland Rice Genotypes in Organic Production. Gursewak Singh*¹, Brian Ward², Raghupathy Karthikeyan,¹ Michael W. Marshall³, Sarah White¹, Jai Rohilla⁴, Matthew A. Cutulle²; ¹Clemson University, Clemson, SC, ²Clemson University, Charleston, SC, ³Clemson University, Blackville, SC, ⁴USDA-ARS Dale Bumpers National Rice Research Center, Stuttgart, AR (305)

01:15 PM †Measuring Weed-crop Leaf Area Ratios with UAV Imagery to Predict Yield Loss in Corn. Avi S. Goldsmith*, Robert Austin, Charlie W. Cahoon, Ramon G. Leon; North Carolina State University, Raleigh, NC (306)

01:30 PM †Characterization of Various John Deere See & Spray™ Sprayer Settings. Diego J. Contreras*¹, Jackson W. Alsdorf¹, Ronel J. Argueta¹, Lauren M. Lazaro², William L. Patzoldt², Wesley Everman¹; ¹North Carolina State University, Raleigh, NC, ²Blue River Technology, Sunnyvale, CA (307)

01:45 PM †Stress Resilience in Weeds Through Physiological Priming- A Case Study Using Palmer Amaranth. Gagandeep Kaur*¹, Rohit Kumar², Elizabeth Leonard¹, Nishanth Tharayil¹; ¹Clemson University, Clemson, SC, ²Clemson University, Central, SC (308)

02:00 PM †Evaluating Soybean (*Glycine max*) Seed Inoculation with *Rhizobium japonicum* and Plant Growth-Promoting Rhizobacteria (PGPR): Impacts on Yield, Soil Microbial Properties, and Herbicide Carryover. Ncomiwe A. Maphalala*¹, Alaina M. Richardson², Josiane C. Argenta²,

Sabrina Sastre², Aricia Ritter Correa², Dante Elias², Te-Ming (Paul) Tseng³; ¹Mississippi State University-Department of Plant and Soil Sciences, Starkville, MS, ²Mississippi State University, Starkville, MS, ³Mississippi State University, Mississippi State, MS (309)

- 02:15 PM †Image Classification of Herbicide Symptomology in Cotton Using Deep Learning.** Ubaldo Torres*¹, Joe Johnson², Bishwa B. Sapkota¹, Scott A. Nolte³, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Soil and Crop Sciences, Texas A&M University, College Station, TX, ³Texas A&M AgriLife Extension, College Station, TX (310)
- 02:30 PM †Comparison of Weed Suppression by Bicultures and Monocultures of Sunn Hemp and Sorghum-sudangrass Cover Crops.** Jean-Maude Louizias*¹, Johan Desaegeer², Rosalie L. Koenig³, Gabriel Maltais-Landry⁴, Carlene A. Chase⁵; ¹University of Florida, Gainesville, FL, ²University of Florida/Gulf Coast Research and Education Center, Wimauma, FL, ³University of Florida/Agronomy Department, Gainesville, FL, ⁴University of Florida/Soil, Water, and Ecosystem Science, Gainesville, FL, ⁵University of Florida, Horticultural Sciences Department, Gainesville, FL (311)
- 02:45 PM †Effect of Adjuvant on Droplet Characteristics and Deposition of Residual Soybean Herbicides.** Sydney C. Baker*¹, Darrin M. Dodds², Luis A. Avila¹, Jake A. Patterson¹, Antonio Augusto Tavares¹; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Mississippi State, MS (312)
- 03:00 PM Break**
- 03:15 PM †Assessing the Allelopathic Effects of Coumarin and Chlorogenic Acid Alone and in Synergy with Glyphosate on the Management of Palmer Amaranth (*Amaranthus palmeri*).** Alyssa L. Miller*¹, Josiane C. Argenta¹, Varsha Varsha², Ziming Yue³, Te-Ming (Paul) Tseng⁴; ¹Mississippi State University, Starkville, MS, ²Department of Plant and Soil Sciences, Mississippi State University, Starkville, MS, ³MSU, Mississippi State, MS, ⁴Mississippi State University, Mississippi State, MS (313)

- 03:30 PM** †**Cereal Rye Cover Crop Termination Timing and Methods Influences Weed Management in Peanut.** Olumide Samuel Daramola*¹, Greg MacDonald², Ramdas Kanissery³, Barry L. Tillman⁴, Hardeep Singh⁵, Pratap Devkota⁶; ¹University of Florida/IFAS, Jay, FL, ²University of Florida, Gainesville, FL, ³University of Florida – IFAS, Immokalee, FL, ⁴University of Florida, North Florida Research and Education Center, Marianna, FL, ⁵University of Florida, West Florida Research and Education Center, Jay, FL, ⁶University of Florida, Jay, FL **(314)**
- 03:45 PM** †**Evaluating the Spray Patterns of Four Boomless Nozzles at Increasing Speeds.** Thomas H. Duncan*¹, John D. Byrd, Jr.², Kayla L. Broster², Chris R. Gregory¹; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Mississippi State, MS **(315)**
- 04:00 PM** †**Glyphosate as a Selective Herbicide?** Maureen M. Kahiu*¹, James Brosnan²; ¹University of Tennessee, Knoxville, TN, ²University of Tennessee, Knoxville, TN **(316)**
- 04:15 PM** †**Ecological Shifts in Weed Communities Influenced by Management Practices and Elevated CO₂ in Forage Bermudagrass (*Cynodon dactylon*).** Andrew J. Ahlersmeyer*¹, Stephen Prior², Andrew J. Price³, Aniruddha Maity¹; ¹Auburn University, Auburn, AL, ²USDA, Auburn, AL, ³USDA-ARS-NSDL, Auburn, AL **(317)**
- 04:30 PM** †**Enhancing Weed Detection Capabilities in Low-cost Drone Systems for Crop Monitoring.** Roberto Gomez Gonzalez*¹, Prabha Sundaravadivel², Reginald Fletcher³, Krishna Reddy³; ¹Dept. of Electrical and Computer Engineering, The University of Texas at Tyler, Houston, TX, ²The University of Texas at Tyler, Tyler, TX, ³United States Department of Agriculture, Agricultural Research Service, Stoneville, MS **(318)**
- 04:45 PM** **Meeting**

TUESDAY MORNING JANUARY 23

ORAL – 01. Agronomic Crops

LOCATION: Regency F
TIME: 9:00 AM – 4:45 PM Central
Time
CHAIR: Craig M. Alford
Corteva
Ankeny, IA
CO-CHAIR: Connor Webster
LSU AgCenter
Baton Rouge, LA

***SPEAKER**

- 09:00 AM A Quest for Herbicide Control of Windmillgrass (*Chloris spp.*) and White Tridens (*Tridens albescens*) in Reduced-Tillage Crop Systems.** Reagan Noland*¹, Brad Easterling², Clay Cole¹, Nick Dickson³, Josh Blaneck⁴, Sarita Short⁵, Morgan McCulloch⁴, Gregory Wilson⁴; ¹Texas A&M AgriLife Extension, San Angelo, TX, ²Texas A&M AgriLife Extension Service, Garden City, TX, ³Texas A&M AgriLife Extension Service, Roby, TX, ⁴Texas A&M AgriLife Extension Service, San Angelo, TX, ⁵Texas A&M AgriLife Extension Service, Brady, TX **(319)**
- 09:15 AM Multi-Environmental Evaluation of the PtxD-Phosphite System for Weed Suppression in Cotton.** Kapil A. Chobhe*¹, Reagan Noland², Shilpa Singh¹, Keerti Rathore¹, Gaylon Morgan³, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Texas A&M AgriLife Extension, San Angelo, TX, ³Cotton Incorporated, Cary, NC **(320)**
- 09:30 AM Integration of Drip Irrigation and Herbicides on Weed Management in Cotton in India.** Samunder Singh*; Director Agronomy, MICADA, Haryana, India, Hisar 125001, India **(321)**
- 09:45 AM Weed Control Measures and Biochar Impact on Productivity of Lowland Rice (*Oryza sativa* L.) Varieties in Northern Nigeria.** Musa A. Mahadi*, D B. Ishaya, A. B. Ahmed, I. Y. Amapu; Ahmadu Bello University, Zaria, Zaria, Nigeria **(322)**

- 10:00 AM Break**
- 10:15 AM Substituting Atrazine with Herbicide Programs Incorporating Amicarbazone in Grain Sorghum.** Michael R. Dodde*¹, Jason K. Norsworthy¹, Matthew C. Woolard¹, Tanner A. King², Ryan S. Henry³; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas Division of Agriculture, Fayetteville, AR, ³UPL NA Inc., Fort Wayne, IN (323)
- 10:30 AM Rice Cultivar Tolerance to a Three-Leaf Fluridone Application.** Maria Carolina C R Souza*¹, Jason K. Norsworthy², Matthew C. Woolard², Tanner A. King³, Mason C. Castner², Jared T. Smith², Thomas R. Butts⁴; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³University of Arkansas Division of Agriculture, Fayetteville, AR, ⁴University of Arkansas, Lonoke, AR (324)
- 10:45 AM Developing a Machine Learning-Based Weed Detection and Localization Framework for Targeting Weed Escapes in Rice.** Bholuram Gurjar*¹, Vijay Kumar², Steve Kalssen², Virender Kumar², Muthukumar V. Bagavathiannan¹, Jerico Stefan R. Bigornia²; ¹Texas A&M University, College Station, TX, ²International Rice Research Institute, Los Baños, Philippines (325)
- 11:00 AM Investigation of Waterhemp (*Amaranthus tuberculatus*) Control Utilizing Sequential and Overlapping Residual Herbicides in Early Planted Soybean in Kentucky.** Travis Legleiter*; University of Kentucky, Princeton, KY (326)
- 11:15 AM Wild Oat Wheat Interference Affected by Acid Soils.** Joan Campbell*, Traci Rauch; University of Idaho, Moscow, ID (327)
- 11:30 AM Response of Difficult-to-Control Palmer Amaranth Populations to Fluridone and Diflufenican.** Jason K. Norsworthy*¹, Matthew C. Woolard¹, Maria Souza¹, Tom Barber², Tommy Butts²; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Lonoke, AR (328)

11:45 AM The Silver Bullet That Wasn't: Rapid Agronomic Weed Adaptations to Glyphosate in North America. Christopher A. Landau¹, Kevin W. Bradley², Erin E. Burns³, Michael L. Flessner⁴, Karla L. Gage⁵, Aaron Hager⁶, Joseph T. Ikley⁷, Prashant Jha⁸, Amit J. Jhala⁹, Paul Johnson¹⁰, Bill Johnson¹¹, Sarah Lancaster¹², Travis Legleiter¹³, Dwight Lingenfelter¹⁴, Mark Loux¹⁵, Eric J. Miller¹⁶, Jason K. Norsworthy¹⁷, Mike Owen⁸, Scott A. Nolte¹⁸, Debalin Sarangi¹⁹, Peter H. Sikkema²⁰, Christy L. Sprague³, Mark VanGessel²¹, Rodrigo Werle²², Bryan G. Young²³, Martin Williams^{*24}; ¹University of Illinois, Crop Sciences, Urbana, IL, ²University of Missouri, Columbia, MO, ³Michigan State University, East Lansing, MI, ⁴Virginia Tech, Blacksburg, VA, ⁵Southern Illinois University Carbondale, Carbondale, IL, ⁶University of Illinois, Urbana, IL, ⁷North Dakota State University, Fargo, ND, ⁸Iowa State University, Ames, IA, ⁹University of Nebraska Lincoln, Lincoln, NE, ¹⁰South Dakota State University, Brookings, SD, ¹¹Purdue University, West Lafayette, IN, ¹²Kansas State University, Manhattan, KS, ¹³University of Kentucky, Princeton, KY, ¹⁴Penn State University, University Park, PA, ¹⁵Ohio State University, Columbus, OH, ¹⁶Southern Illinois University, Carbondale, IL, ¹⁷University of Arkansas, Fayetteville, AR, ¹⁸Texas A&M AgriLife Extension, College Station, TX, ¹⁹University of Minnesota, St. Paul, MN, ²⁰University of Guelph, Ridgetown, ON, Canada, ²¹University of Delaware, Georgetown, DE, ²²University of Wisconsin-Madison, Madison, WI, ²³Purdue University, Brookston, IN, ²⁴United States Department of Agriculture, Agricultural Research Service, Urbana, IL **(329)**

12:00 PM Lunch

01:00 PM Weed Management for Camelina and Field Pea Intercrops. Shaun Sharpe^{*1}, Christina Eynck¹, Michelle Hubbard², Lana Shaw³; ¹Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, ²Agriculture and Agri-Food Canada, Swift Current, SK, Canada, ³South East Research Farm, Redvers, SK, Canada **(330)**

01:15 PM Current Weed Management Tools, Challenges, and Opportunities for the New Winter Oilseed Crops Camelina, Carinata, and Pennycress. Mark L. Bernards^{*1}, Ramon G. Leon²; ¹United States Department of Agriculture, Agricultural

Research Service, Morris, MN, ²North Carolina State University, Raleigh, NC (331)

01:30 PM Exploring the Use of Biochar for Carbon Banding Applications in Grass Seed Production Systems. Clint M. Mattox*; United States Department of Agriculture, Agricultural Research Service, Corvallis, OR (332)

01:45 PM Beyond Borders: the Undesired Journey of Transgenes Flow from Corn to Teosinte. Luan Cutti*¹, Guilherme Menegol Turra², Estéfani Sulzbach², Paula Sinigaglia Angonese³, Catarine Markus², Eric L. Patterson¹, Todd A. Gaines⁴, Aldo Merotto²; ¹Michigan State University, East Lansing, MI, ²Federal University of Rio Grande do Sul, Porto Alegre, Brazil, ³Federal University of Rio Grande do Sul, Porto Alegre, Brazil, ⁴Colorado State University, Fort Collins, CO (333)

02:00 PM Severe Tolpyralate Sensitivity in Corn: Scope and Genetic Basis. Martin Williams*¹, Nicholas Hausman², Ana I. Saballos³, Christopher A. Landau⁴, Matthew Brooks¹, Pat Flannery⁵, Bill Tracy⁵, Charlie Thompson⁶; ¹United States Department of Agriculture, Agricultural Research Service, Urbana, IL, ²USDA, Urbana, IL, ³Global Change and Photosynthesis Research, US Department of Agriculture, Agricultural Research Service, Urbana, IL, ⁴University of Illinois, Crop Sciences, Urbana, IL, ⁵UW-Madison, Madison, WI, ⁶IFSI, Tolono, IL (334)

02:15 PM Examining the Competitive Dynamics Between *Parthenium hysterophorus* and Two Crops (*Zea mays* and *Gossypium hirsutum*) in Israel. Sahar Malka*¹, Hanan Eizenberg², Maor Matzrafi³, Ran Nisim Lati⁴, Assaf Distelfeld⁵; ¹Department of Plant Pathology and Weed Research, Agricultural Research Organization – Volcani Institute, Newe-Ya' ar Research Center., Mei Ammi, Israel, ²Agricultural Research Organization (ARO), Newe Ya'ar Research Center, Ramat Yishay, Israel, ³Department of Plant Pathology and Weed Research, Agricultural Research Organization (ARO), Newe Ya'ar Research Center, Ramat-yishay, Israel, ⁴Department of Plant Pathology and Weed Research, Newe Ya' ar Research Center, Agricultural Research Organization (ARO) – Volcani Center, Ramat Yishay, Israel, ⁵Department of Evolutionary and Environmental Biology, Faculty of Natural Sciences and the Institute of Evolution, University of Haifa, Haifa, Israel (335)

- 02:30 PM Chaff on Top and Impact Mill as New HWSC Tools for Herbicide-Resistant Weed Management in Israel.** Idan S. Roth¹, Yossi Kashti², Baruch Rubin*¹; ¹Hebrew University of Jerusalem, Faculty of Agriculture, Food and Environment, Rehovot, Israel, ²Institute of Agricultural Engineering, ARO, Volcani Center, Rishon L'ezion, Israel (336)
- 02:45 PM The Monetary Cost of Glyphosate-Resistant Weeds on Major Field Crops Grown in Ontario.** Peter H. Sikkema*, Nader Soltani; University of Guelph, Ridgetown, ON, Canada (337)
- 03:00 PM Break**
- 03:15 PM Investigation of Suspected Dicamba Resistance in Waterhemp and Palmer Amaranth Populations.** Aruna V. Varanasi*, Chandrashekar C. Aradhya, Jeffrey Herrmann, John Willis, Steven Callen, Jenny Krebel, Joshua Fischer, Graham Head; Bayer CropScience, Chesterfield, MO (338)
- 03:30 PM Characterization of Kochia (*Bassia scopia*) Resistant to PPO-inhibiting Herbicides in North Dakota.** Joseph T. Ikley*¹, Quincy D. Law¹, Kirk A. Howatt¹, Brian Jenks²; ¹North Dakota State University, Fargo, ND, ²North Dakota State University, Minot, ND (339)
- 03:45 PM First Year Results of a Multi-State Evaluation of Harvest Weed Seed Control.** Michael L. Flessner*¹, Muthukumar V. Bagavathiannan², Steven Brian Mirsky³, Mark VanGessel⁴, Ian Burke⁵, Eli C. Russell¹, Eugene P. Law⁶, Sarah A.d. Chu², Jessica E. R. Kalin⁵; ¹Virginia Tech, Blacksburg, VA, ²Texas A&M University, College Station, TX, ³USDA ARS, Beltsville, MD, ⁴University of Delaware, Georgetown, DE, ⁵Washington State University, Pullman, WA, ⁶University of Delaware, Beltsville, MD (340)
- 04:00 PM Confirmation of a Three-way (Thifensulfuron, Atrazine and Glyphosate) Herbicide Resistant Population of Palmer Amaranth (*Amaranthus palmeri*) in North Carolina.** Ronel J. Argueta*¹, Eric Jones², Diego J. Contreras¹, Jackson W. Alsdorf¹, Wesley Everman¹; ¹North Carolina State University, Raleigh, NC, ²South Dakota State University, Brookings, SD (341)

04:15 PM Protoporphyrinogen Oxidase Inhibitor (Group 14)-resistant Kochia (*Bassia scoparia*) in Canada. Charles M. Geddes*; Agriculture and Agri-Food Canada, Lethbridge, AB, Canada (342)

04:30 PM From 2019 to 2021 – an Update on Multi-state Survey of Waterhemp (*Amaranthus tuberculatus*) and Palmer Amaranth (*A. palmeri*) in the USA on Sensitivity to Multiple Herbicides. ?. Chandrima Shyam*¹, Daljit Singh², Drew Tyre¹, John Willis¹, Alejandro Perez-Jones¹, Chandrashekar C. Aradhya¹; ¹Bayer Crop Science, Chesterfield, MO, ²Bayer, Chesterfield, MO (343)

TUESDAY MORNING JANUARY 23

ORAL – 08. Weed Biology and Ecology

LOCATION: Regency H
TIME: 9:00 AM – 4:00 PM Central Time
CHAIR: Shilpa Singh
Texas A&M University
College Station, TX
CO-CHAIR: Swati Shrestha
Oklahoma State University
Stillwater, OK

***SPEAKER**

09:00 AM *Amaranthus palmeri* S. Watson: A New Threat to Agriculture in Europe and the Mediterranean Region. Maor Matzrafi*¹, Laura Scarabel², Joel Torra³, Husrev Mennan⁴, Lias Travlos⁵; ¹Department of Plant Pathology and Weed Research, Agricultural Research Organization (ARO), Newe Ya'ar Research Center, Ramat-yishay, Israel, ²Institute for Sustainable Plant Protection (IPSP), National Research Council (CNR), Legnaro, Italy, ³Department d'Hortofructicultura, Botànica i Jar'ineria, Agrotecnio—CERCA Center, Universitat de Lleida, Lleida, Spain, ⁴Department of Plant Protection, Ondokuz Mayıs University, Samsun, Turkey, ⁵Laboratory of Agronomy, Department of Crop Science, Agricultural University of Athens, Athens, Greece (344)

- 09:15 AM Genetic Mapping of Resistance to 2,4-D and Dicamba in Waterhemp (*Amaranthus tuberculatus*).** Isabel Werle*¹, Lucas Bobadilla², Damilola A. Raiyemo¹, Patrick Tranel¹; ¹University of Illinois, Urbana, IL, ²University of Illinois, Champaign, IL (346)
- 09:30 AM Regional-Scale Weed Management of Pigweed (Genus *Amaranthus*): Insights from a Climate Gradient Study in Commercial Tomato Fields.** Roni Gafni*¹, Lior Blank², Hanan Eizenberg³; ¹HUJI, Ramat Yishay, Israel, ²Agricultural Research Organization, Volcani Center, Rishon Lezion, Israel, ³Agricultural Research Organization (ARO), Neve Yaar Research Center, Ramat Yishay, Israel (347)
- 09:45 AM *Parthenium hysterophorus* L. In the Americas: Predicting Suitable Habitats Beyond its Native Range Under Future Climatic Conditions.** Sarah E. Kezar*¹, Asad Shabbir², Antonio DiTommaso³; ¹Cornell University, Ithaca, NY, ²The University of Sydney, Camden, Australia, ³Soil and Crop Sciences Section, School of Integrative Plant Science, Cornell University, Ithaca, NY (348)
- 10:00 AM Break**
- 10:15 AM Weed, Invasive or A Bit of Both? A Case Study of Ragweed *Parthenium* (*Parthenium hysterophorus*).** Ali Ahsan Bajwa*¹, Runping Mao², Asad Shabbir³, Steve Adkins²; ¹La Trobe University, Melbourne, Australia, ²University of Queensland, Brisbane, Australia, ³NSW Department of Primary Industries, Orange, Australia (349)
- 10:30 AM Understanding Phenotypic Variation Between Clopyralid Resistant and Susceptible Common Ragweed with Omic and Greenhouse Analysis.** Nash D. Hart*¹, Eric L. Patterson², Erin E. Burns²; ¹Michigan State University, Durand, MI, ²Michigan State University, East Lansing, MI (350)
- 10:45 AM A Transposable Element Insertion in *IAA16* Interrupts Normal Splicing and Causes Resistance to Dicamba in *Bassia scoparia*.** Jacob S. Montgomery*¹, Neeta Soni¹, Eric L. Patterson², Philip Westra¹, Keith Slotkin³, Franck E. Dayan¹, Todd A. Gaines¹; ¹Colorado State University, Fort Collins, CO, ²Michigan State University, East Lansing, MI, ³Donald Danforth Plant Science Center, St. Louis, MO (351)

- 11:00 AM Novel PPO1 Target Site Mutations Lead to Cross Resistance to PPO-Inhibiting Herbicides in *Bassia scoparia* (Kochia) from North Dakota.** Aimone Porri*¹, Ingo Meiners², Samuel Willingham³, Jens Lerchl⁴; ¹BASF Global Research & Development, Limburgerhof, Germany, ²BASF, Rtp, NC, ³BASF, Durham, NC, ⁴BASF SE, Limburgerhof, Germany (352)
- 11:15 AM Branched Broomrape Seed Germination Response to QAC Sanitizers.** Pershang Hosseini*, Cassandra L. Swett, Brad Hanson; University of California Davis, Davis, CA (353)
- 11:30 AM Effects of Elevated CO₂ on the Growth of Tropical Spiderwort Under Drought Conditions and Low-Dose Herbicide Applications.** William Yates*¹, Stephen Prior², Aniruddha Maity¹; ¹Auburn University, Auburn, AL, ²USDA, Auburn, AL (354)
- 11:45 AM Genome Sequence of Yellow Nutsedge (*Cyperus esculentus*) Provides Insights into Genetic Variations in Herbicide Protein Targets.** Jinesh Patel*¹, Leslie Goertzen¹, Claudia A. Rutland², Todd A. Gaines³, Eric L. Patterson⁴, Mithila Jugulam⁵, Victor Llaca⁶, Kevin Fengler⁶, Luan Cutti⁷, Joseph S. McElroy¹; ¹Auburn University, Auburn, AL, ²Auburn University Department of Crop, Soil, and Environmental Sciences, Auburn, AL, ³Colorado State University, Fort Collins, CO, ⁴Michigan State University, East Lansing, MI, ⁵Kansas State University, Manhattan, KS, ⁶Corteva Agriscience, Johnston, IA, ⁷Federal University of Rio Grande do Sul, Porto Alegre, Brazil (355)
- 12:00 PM Lunch**
- 01:00 PM Mechanism of Paraquat Resistance in Italian Ryegrass Populations from North Carolina.** Jose H. de Sanctis*¹, Charlie W. Cahoon¹, Wesley Everman¹, Travis W. Gannon¹, Katie M. Jennings¹, Zachary R. Taylor², Brock A. Dean¹; ¹North Carolina State University, Raleigh, NC, ²North Carolina State University, Sanford, NC (356)
- 01:15 PM The Genome of Italian Ryegrass Reveals the Genetic Architecture of Resistance to Glufosinate, Glyphosate, and Paraquat.** Caio A. Brunharo*; Pennsylvania State University, University Park, PA (357)

- 01:30 PM Evaluation of Phenospex TraitFinder as a Potential Tool for Weed Control Phenotyping.** Chandrima Shyam*, Alejandro Perez-Jones; Bayer Crop Science, Chesterfield, MO (358)
- 01:45 PM How Genomics is Reshaping Our Understanding of Copy Number Variation and Herbicide Resistance Evolution.** Eric L. Patterson*; Michigan State University, East Lansing, MI (359)
- 02:00 PM Using the Right Tools: Overcoming Constraints to High-Throughput Statistical Genetics Analyses in Weeds Caused by Self-Fertilization and Polyploidy.** Samuel R. Revolinski*; University of Kentucky, Lexington, KY (360)
- 02:15 PM Brawling Weeds and the Fight for Crop Survival.** Clarence Swanton*¹, Sasan Amirsadeghi², Nicole Berardi³, William B. Kramer⁴, Andrew McKenzie-Gopsill⁵; ¹University of Guelph, Department of Plant Agriculture, Guelph, AZ, Canada, ²University of Guelph, Department of Plant Agriculture, Guelph, ON, Canada, ³University of Guelph, Guelph, ON, Canada, ⁴Colorado State University, Fort Collins, CO, ⁵Agriculture and Agri-Food Canada, Charlottetown, PE, Canada (361)
- 02:30 PM Higher Seeding Densities Improve Perennial Flower Strip Establishment Under Weedy Conditions.** Sophie Westbrook*¹, Rebecca Stup¹, Scott Morris¹, Todd Uginé¹, Antonio DiTommaso²; ¹Cornell University, Ithaca, NY, ²Soil and Crop Sciences Section, School of Integrative Plant Science, Cornell University, Ithaca, NY (362)
- 02:45 PM Potential Threat from Overusing Cereal Rye as a Preferred Cover Crop Species Across North America.** Aniruddha Maity*; Auburn University, Auburn, AL (363)
- 03:00 PM Break**
- 03:15 PM The Influence of Management on Weed Communities and Yield in Hemp (*Cannabis sativa* L.).** Karla L. Gage*¹, Kaitlin E. Creager², Eric J. Miller², Kevin Bamber³, Matthew P. Spoth³, Michael L. Flessner³, Lynn M. Sosnoskie⁴; ¹Southern Illinois University Carbondale, Carbondale, IL, ²Southern Illinois University, Carbondale, IL, ³Virginia Tech, Blacksburg, VA, ⁴Cornell University, Geneva, NY (364)

03:30 PM Unlocking the Power of Sensor-Based Data Collection in Weed Ecology. Eugene P. Law*¹, Uriel D. Menalled², Soren K. Skovsen³, Matthew Kutugata⁴; ¹Ohio State University, Columbus, OH, ²Cornell University, Ithaca, NY, ³Aarhus University, Aarhus, Denmark, ⁴Texas A&M, College Station, TX (365)

TUESDAY AFTERNOON JANUARY 23

SYMPOSIUM – Pesticide Registration, Current Standards and Regulations for the Assessment of Environmental Impacts of Pesticide Use in the United States

LOCATION: Regency G
TIME: 1:00 PM – 5:00 PM Central Time
CHAIR: Zahoor A. Ganie
 FMC
 Newark, DE

***SPEAKER**

- 01:00 PM Overview of Pesticide Registration Process in the United States, Legislation, and Standards.** Zahoor A. Ganie*; FMC, Newark, DE (366)
- 01:30 PM Ecotoxicology Data Requirements, Methodologies and Risk Assessment.** Tessa Scown*; FMC, Newark, DE (367)
- 01:55 PM Environmental Sustainability and Industry Perspectives of Changes in EPA Regulations on Pesticide Use with Advanced Technologies.** Sarah Hovinga*; Bayer Crop Science, Orangevale, CA (368)
- 02:20 PM What Can Happen When You Don't Get it Right? Environmental and Societal Implications of Off-target Herbicide Movement.** Kevin W. Bradley*; University of Missouri, Columbia, MO (371)
- 02:50 PM Break**

03:15 PM Industry Perspectives on Endangered Species Act (ESA): Regulatory Issues and Natural Wildlife. Scott B. Clewis*, Tony Burd; Syngenta Crop Protection, LLC, Greensboro, NC (369)

03:40 PM Discussion

TUESDAY AFTERNOON JANUARY 23

ORAL – 09. Biocontrol of Weeds

LOCATION: Regency H
TIME: 4:00 PM – 4:30 PM Central Time
CHAIR: Aniruddha Maity
Auburn University
Auburn, AL

***SPEAKER**

04:00 PM Does the Amount of Sorgoleone Production Correspond with Weed Suppression in Grain Sorghum (*Sorghum bicolor*)? Megan L. Schill*; Texas A&M, College Station, TX (372)

04:15 PM Plant Sterols: Potential Preemergent Non-synthetic Herbicide. Krishna Kumar*; Griffing Biologics LLC, Hearne, TX (373)

TUESDAY AFTERNOON JANUARY 23

IWGC Meeting

LOCATION: Llano
TIME: 5:00 PM – 6:00 PM Central Time
MODERATOR: Todd A. Gaines
Colorado State University
Fort Collins, CO
MODERATOR: Eric L. Patterson
Michigan State University
East Lansing, MI

TUESDAY AFTERNOON JANUARY 23

Student Quiz Bowl/Mixer

LOCATION: Rio Grande Ballroom
TIME: 5:00 PM – 7:00 PM Central
Time

Quiz Bowl / Mixer

Quiz Bowl Master of Ceremonies and Host: Peter Dotray.

WEDNESDAY MORNING JANUARY 24

Christian Fellowship Breakfast

LOCATION: Live Oak
TIME: 6:30 AM – 8:00 AM Central
Time
MODERATOR: Charlie W. Cahoon
North Carolina State University
Raleigh, NC

WEDNESDAY MORNING JANUARY 24

President's Breakfast

LOCATION: Pecan
TIME: 6:30 AM – 8:00 AM Central
Time
MODERATOR: Carroll Moseley
Syngenta
Brown Summit, NC, NC

***SPEAKER**

Regional and National Weed Society Leadership Only Please

WEDNESDAY MORNING JANUARY 24

**SYMPOSIUM – New Approaches to Herbicide
and Bioherbicide Discovery**

LOCATION: Rio Grande Ballroom W/C
TIME: 9:00 AM – 1:00 PM Central
Time
CHAIR: Stephen O. Duke
University of Mississippi
Oxford, MS
CO-CHAIR: Franck E. Dayan
Colorado State University
Fort Collins, CO

***SPEAKER**

- 09:00 AM Plant Extracts to Kill Weeds.** Gustavo M. Sosa*; INBIOAR GLOBAL LTD, Rosario, Argentina (374)
- 09:20 AM Biocontrol of Striga (Witchweed): Maize Seed Coating Employing Virulence-selected *Fusarium*.** Claire S. Baker*; Toothpick Company Ltd., Kakamega, Kenya (375)
- 09:40 AM Overcoming the Challenges of Developing Microbial Bioherbicides.** Louis Boddy*; ProFarm Group, Davis, CA (376)
- 10:00 AM Break**
- 10:20 AM Galaxy, a High-content Imaging Platform Enabling Novel Herbicide Discovery.** Xavier Jacq*; moa Technology, Oxford, United Kingdom (377)
- 10:40 AM Artificial Intelligence at Work, the Discovery of Novel Chemistries.** Eyal Ben-Chanoch*; Agrematch Ltd, Rehovot, Israel (378)
- 11:00 AM Harnessing Targeted Protein Degradation to Develop the Next Generation of Crop Protection Chemistry.** Samuel G. Gattis*; Oerth Bio, Durham, NC (379)
- 11:20 AM ENKOMPASS: A Platform for Target-Based Discovery of Novel Crop Protection**

Chemistries. Karthik Putta*, Tim Panosian, Peter Stchur, Jacqueline Heard, Thomas Meade; ENKO, Mystic, CT (380)

11:40 AM Developing Herbicide-tolerant Crops Through Target-site Protein Evolution and CRISPR Editing. Lucas Lieber*; BioHeuris, St. Louis, MO (381)

12:00 PM Herbicide Discovery from Plant Pathogens Using Genomic Methods. Jack Kloeber¹, Alexander Polidore*¹, Amit J. Jhala²; ¹MicroMGx, Chicago, IL, ²University of Nebraska Lincoln, Lincoln, NE (382)

12:20 PM Projini's Platform for Discovering New Mode-of-Action Herbicide Leads Inhibiting Protein-Protein Interactions: Example Targeting O-Acetylserine Sulfhydrylase. Jonathan Gressel¹, Dotan Peleg*²; ¹Weizmann Institute, Rehovot, Israel, ²Projini AgChem, D.n. Upper Galil, Israel (383)

12:40 PM Discussion

WEDNESDAY MORNING JANUARY 24

ORAL – 01. Agronomic Crops

LOCATION: Regency F
TIME: 9:00 AM – 11:00 AM Central
 Time
CHAIR: Craig M. Alford
 Corteva
 Ankeny, IA
CO-CHAIR: Connor Webster
 LSU AgCenter
 Baton Rouge, LA

***SPEAKER**

09:00 AM From Liberty® 280 (Racemic Glufosinate Ammonium) to Liberty® ULTRA (L-Glufosinate Ammonium) Herbicide, Powered by Glu-L™ Technology. Liam J. Vincent¹, Eric C. Schultz¹, Alice L. Harris¹, Marcel P. Kienle², Ryan B. Aldridge¹, Samuel Willingham³, Ingo Meiners¹,

Siyuan Tan*⁴; ¹BASF, Rtp, NC, ²BASF, Limburgerhof, Germany, ³BASF, Durham, NC, ⁴BASF, Cary, Nc 27519, Usa, NC (384)

- 09:15 AM Development of a Quizalofop-p-ethyl and Glufosinate-ammonium Premix: the Rest of the Story.** Richard K. Zollinger*¹, Gregory R. Armel², Gary T. Cundiff³, Daniel Kunkel⁴, Joseph A. Bruce⁵, Peter J. Porpiglia⁶; ¹Amvac Chemical Company, Spokane Valley, WA, ²AMVAC Chemical Corporation, Rocky Mount, NC, ³AMVAC Chemical Corporation, Cleveland, MS, ⁴AMVAC, Plainsboro, NJ, ⁵AMVAC Chemical Corporation, Glen Carbon, IL, ⁶AMVAC Chemical Corporation, Newport Beach, CA (385)
- 09:30 AM Storen: A New Corn Herbicide in 2024 That Provides Clean Rows and Clear Results.** Kyle Russell*¹, Tom Beckett², Mark J. Kitt³, Nathan H. Haugrud⁴; ¹Syngenta Crop Protection, Houston, TX, ²Syngenta Crop Protection, Greensboro, NC, ³Syngenta Crop Protection, LLC, Greensboro, NC, ⁴Syngenta Crop Protection, LLC, Fargo, ND (386)
- 09:45 AM Storen Herbicide – Consistent and Long-Lasting Residual Weed Control in Corn.** B. David Black*¹, Scott E. Cully², Mark J. Kitt³, Thomas H. Beckett³; ¹Syngenta Crop Protection, LLC, Searcy, AR, ²Syngenta Crop Protection, LLC, Marion, IL, ³Syngenta Crop Protection, LLC, Greensboro, NC (387)
- 10:00 AM Break**
- 10:15 AM What's New in Industry.** James C. Holloway Jr*¹, Eric W. Palmer², Mark J. Kitt², Thomas H. Beckett², Cristin Weber³; ¹Syngenta Crop Protection, LLC, Jackson, TN, ²Syngenta Crop Protection, LLC, Greensboro, NC, ³Syngenta Crop Protection, Normal, IL (388)
- 10:30 AM Development of Convintro™ Brand Herbicides for Managing *Amaranthus* Species in Corn and Soybean: Field Performance Update.** John Buol*, Carl Coburn, Richard Leitz, Zewei Miao, Emily Scholting; Bayer, St. Louis, MO (389)
- 10:45 AM Intrava DX: A New Herbicide for the U.S. Corn Acre.** Ryan S. Henry*¹, Thomas Mudd², Cody J. Gray³; ¹UPL NA Inc., Fort Wayne, IN, ²UPL NA Inc., Minneapolis, MN, ³UPL NA Inc., Peyton, CO (390)

WEDNESDAY MORNING JANUARY 24

ORAL – 05. Regulatory Aspects

LOCATION: Regency H
TIME: 9:00 AM – 10:45 AM Central
Time
CHAIR: Cameron H. Douglass
USDA
Washington, DC
CO-CHAIR: Kayla M. Eason
United States Department of
Agriculture
Tifton, GA

***SPEAKER**

09:00 AM EPA's Draft Herbicide Strategy 101. Lindsay A. Roe*¹, Cameron H. Douglass²; ¹Environmental Protection Agency, Washington, DC, ²USDA, Washington, DC (391)

09:15 AM Endangered Species Act Committee: What Have We Done and What Are We Doing? Bill Chism*; Retired from U.S. Environmental Protection Agency, Point Of Rocks, MD (392)

09:30 AM Endangered Species Act Committees: Suggestions to Prepare for Future Changes. Bill Chism*; Retired from U.S. Environmental Protection Agency, Point Of Rocks, MD (393)

09:45 AM Using Engagement and Collaboration to Bring Local Knowledge of Agriculture to National Pesticide Decisions. Leah M. Duzy*¹, Stephanie Binns², Ashlea R. Frank¹, Bernalyn McGaughey¹, Caydee Savinelli³, Jeff Smith⁴, Frank Wong⁵; ¹Compliance Services International, Lakewood, WA, ²BASF Corporation, Washington, DC, ³Syngenta Crop Protection Inc., Greensboro, NC, ⁴Valent U.S.A LLC, San Ramon, CA, ⁵Bayer Crop Science, Chesterfield, MO (394)

10:00 AM Break

- 10:15 AM Understanding the Relationships Between Cover Cropping and Conservation Tillage Practice and the Use of 2,4-D, Atrazine, and Glyphosate by Field Corn and Soybean Growers.** Cameron H. Douglass*¹, Laura Dodson¹, Michelle Ranville¹, Rebecca Nemec¹, Fengxia Dong¹, Ryan Olver²; ¹USDA, Washington, DC, ²Tokyo International University, Tokyo, Japan **(395)**
- 10:30 AM Bayer's CropKey Approaches to Unlock the Future of Sustainable Crop Protection.** Bianca Martins*, Bodo Peters; Bayer, Frankfurt, Germany **(396)**

WEDNESDAY MORNING JANUARY 24

ORAL – 12. Integrated Weed Management

LOCATION: Regency G
 TIME: 9:00 AM – 2:45 PM Central
 Time
 CHAIR: Ramawatar Yadav
 University of Wyoming
 Laramie, WY
 CO-CHAIR: Matthew S. Wiggins
 FMC
 Friendship, TN

***SPEAKER**

- 09:00 AM An Integrated Approach Towards Weeds Management.** Haroon Ur Rashid*; Dubai Community Management L.L.C (Dubai Holding), Dubai, United Arab Emirates **(397)**
- 09:15 AM Advances in Precision Weed Management, 2024.** Vijay Singh*¹, Dhiraj Srivastava¹, Akashdeep Singh Brar¹, Fatemeh Esmaeilbeiki², Rutvij S. Wamanse², Daniel E. Martin³, William Reynolds⁴; ¹Virginia Tech, Painter, VA, ²Virginia Tech, Blacksburg, VA, ³United States Department of Agriculture, College Station, TX, ⁴LeadingEdge Aerial Technology, Smyrna, FL **(398)**

- 09:30 AM Feasibility Studies on Harvest Weed Seed Control in Cotton.** Sarah A.d. Chu*¹, Lauren M. Lazaro², Gaylon Morgan³, Benjamin McKnight⁴, Robert Hardin¹, Greg Holt⁵, Muthukumar V. Bagavathiannan¹; ¹Texas A&M University, College Station, TX, ²Blue River Technology, Sunnyvale, CA, ³Cotton Incorporated, Cary, NC, ⁴Texas A&M AgriLife Extension Service, College Station, TX, ⁵United States Department of Agriculture, Agricultural Research Service, Lubbock, TX **(399)**
- 09:45 AM WEEDS: A Multi-Regional Bioeconomic Decision Support Tool for Guiding Integrated Weed Management.** Purushottam Gyawali*¹, Karen Lindsey², Ankita Ratouri³, Steven Brian Mirsky⁴, Michael Popp², Jason K. Norsworthy⁵, Muthukumar V. Bagavathiannan⁶; ¹Texas A&M University, Department of Soil and Crop Sciences, College Station, TX, ²Department of Agricultural Economics and Agribusiness, University of Arkansas, Fayetteville, AR, ³Agricultural and Biological Engineering, Purdue University, West Lafayette, IN, ⁴USDA ARS, Beltsville, MD, ⁵University of Arkansas, Fayetteville, AR, ⁶Texas A&M University, College Station, TX **(400)**
- 10:00 AM Break**
- 10:15 AM Assessing the Allelopathic Effects of Organic Mulch Extracts on Liverwort Control in Containerized Greenhouse Production.** Manjot Kaur Sidhu*¹, Debalina Saha²; ¹Michigan State University, Lansing, MI, ²Department of Horticulture, Michigan State University, East Lansing, MI **(401)**
- 10:30 AM Cereal Rye Cover Crop Delays Weed Emergence in Cotton.** Gustavo Camargo Silva*¹, Muthukumar V. Bagavathiannan²; ¹Texas A&M University, Department of Soil and Crop Sciences, College Station, TX, ²Texas A&M University, College Station, TX **(402)**
- 10:45 AM Cereal Rye Cover Crop Termination Timings in Corn.** Amar S. Godar*¹, Jason K. Norsworthy¹, Tom Barber²; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Lonoke, AR **(403)**
- 11:00 AM Evaluation of Winter Cover Crop Mixes for Weed Suppression in East Central Texas.** Jodie

M. McVane*, Muthukumar V. Bagavathiannan;
Texas A&M University, College Station, TX (404)

- 11:15 AM Replacing Fallow with Cover Crops for Weed Suppression in Semiarid Central Great Plains.** Sachin Dhanda*¹, Vipin Kumar², Anita Dille³, Augustine Obour³, Elizabeth Yeager³, Johnathan Holman³; ¹Kansas State University, Hays, KS, ²Cornell University, Ithaca, NY, ³Kansas State University, Manhattan, KS (405)
- 11:30 AM Evaluation of Cover Crop Options for Industrial Fiber Hemp Production.** Jodie M. McVane*, Muthukumar V. Bagavathiannan; Texas A&M University, College Station, TX (406)
- 11:45 AM Allelopathic Potential of *Parthenium hysterophorus* Against Selected Weeds of Wheat Crop.** Tauseef Anwar*¹, Noshin Ilyas², Huma Qureshi³; ¹Department of Botany, The Islamia University of Bahawalpur, Bahawalpur, Pakistan, Bahawalpur, Pakistan, ²Department of Botany, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan, ³Department of Botany, University of Chakwal, Chakwal, Pakistan (407)
- 12:00 PM Lunch**
- 01:00 PM Modeling the Effect of Density, Emergence Time, Inter- and Intra-Specific Competition of *Echinochloa Crus-Galli* on Growth and Yield of Dry-Seeded Rice: Simulations with INTERCOM.** Tahir Hussain Awan*; Rice Research Institute, Kala Shah Kaku, Lahore, Pakistan (408)
- 01:15 PM Transcriptome Analysis of Junglerice (*Echinochloa colona*) with Elevated Tolerance to Glufosinate.** Juan Camilo Velásquez R*, Nilda Roma-Burgos, Gulab Rangani; University of Arkansas, Fayetteville, AR (409)
- 01:30 PM Influence of Soybean Width on Palmer Amaranth (*Amaranthus palmeri* S. Wats.) Emergence in Relay Intercropped Versus Single Cropped Soybean.** Jared T. Smith*¹, Jason K. Norsworthy¹, Matthew C. Woolard¹, Tanner A. King², Mason C. Castner¹, Tom Barber³; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas Division of Agriculture, Fayetteville, AR, ³University of Arkansas, Lonoke, AR (410)

- 01:45 PM Investigating Herbicide Sensitivity in Johnsongrass (*Sorghum halepense*): A Multistate Analysis.** Connor L. Purvis*, Erin E. Burns; Michigan State University, East Lansing, MI **(411)**
- 02:00 PM HRAC Global – the New Herbicide Mode of Action Classification 2024.** Jens Lerchl*¹, Roland S. Beffa², Caio Rossi³, Jens Frackenpohl⁴, Jeffrey Epp⁵, Gael Le Goupil⁶, Hudson K. Takano⁷, Hubert Menne⁴, James Morris⁸, Bernd Laber⁴, Matthias Witschel⁹; ¹BASF SE, Limburgerhof, Germany, ²Senior Scientist Consultant, Frankfurt, Germany, ³Corteva Agriscience // HRAC Global, Uberlandia, Brazil, ⁴Bayer Crop Science, Frankfurt, Germany, ⁵Corteva, Indianapolis, IN, ⁶Syngenta Crop Protection, LLC, Basel, Switzerland, ⁷Corteva Agriscience, Indianapolis, IN, ⁸Syngenta Crop Protection, LLC, Jealott`s Hill, Bracknell, United Kingdom, ⁹BASF SE, Ludwigshafen, Germany **(412)**
- 02:15 PM HRAC Global Contributions to Improvements in Sustainable Weed Management Based on Good Agriculture Practices.** Caio Rossi*¹, Roland S. Beffa², Gael Le Goupil³, Jens Lerchl⁴, Bianca Martins⁵; ¹Corteva Agriscience // HRAC Global, Uberlandia, Brazil, ²Senior Scientist Consultant, Frankfurt, Germany, ³Syngenta Crop Protection, LLC, Basel, Switzerland, ⁴BASF SE, Limburgerhof, Germany, ⁵Bayer, Frankfurt, Germany **(413)**
- 02:30 PM A Community-Based Participatory Research Approach to Herbicide Resistance Management.** Nick Bergmann*¹, Ian Burke¹, Garrett Heineck², Chloe Wardropper³; ¹Washington State University, Pullman, WA, ²USDA – ARS, Pullman, WA, ³University of Illinois, Urbana, IL **(414)**

WEDNESDAY MORNING JANUARY 24

**ORAL – 07. Formulation, Adjuvant, &
Application Technology**

LOCATION: Regency H
TIME: 10:45 AM – 12:00 PM Central
Time
CHAIR: Gourav Sharma
Virginia Tech
Blacksburg, VA
CO-CHAIR: Scott A. Nolte
Texas A&M AgriLife
Extension
College Station, TX

***SPEAKER**

- 10:45 AM Spray Drones: Importance of Nozzle Selection on Coverage and Weed Control.** Thomas R. Butts*¹, Jason Davis², Tom Barber¹, Jason K. Norsworthy³, Terry N. Spurlock¹; ¹University of Arkansas, Lonoke, AR, ²University of Arkansas, Batesville, AR, ³University of Arkansas, Fayetteville, AR **(415)**
- 11:00 AM Effects of Adjuvants on UAV Spray Deposition, Drift and Swath Coverage.** Ryan J. Edwards*, Lee A. Boles, Steven A. Fredericks, Sawyer Massie; WinField United, River Falls, WI **(416)**
- 11:15 AM Spray Quality Considerations for Targeted Applications: A Syngenta Perspective.** R Joseph Wuerffel*¹, Neill Newton², Samuel Stephenson³, Simon Caldwell⁴, Cate O'Brien⁴, David Belles²; ¹Syngenta Crop Protection, LLC, Gerald, MO, ²Syngenta Crop Protection, LLC, Greensboro, NC, ³Syngenta Crop Protection, LLC, Basel, Switzerland, ⁴Syngenta Crop Protection, LLC, Bracknell, United Kingdom **(417)**
- 11:30 AM Evaluating Joint Action of Glufosinate Plus PPO-Inhibiting Herbicides.** Ramawatar Yadav*, Andrew R. Kniss; University of Wyoming, Laramie, WY **(418)**

11:45 AM Liberty Ultra (L-glufosinate Ammonium) Improves Crop Tolerance Across Glufosinate Tolerant Crops When Compared to Applications of Racemic Glufosinate-Ammonium. Amber N. Eytcheson*¹, Jayla Allen², Seth Baines³, Scott Baker⁴, Dustin Black⁵, Ryan Grieger⁶, Tyler Schmidt³, Bablu Sharma⁷, Lex Tyson⁸, Felipe Zabala⁹, Liam J. Vincent¹⁰; ¹BASF Corporation, Lubbock, TX, ²BASF Corporation, Carrollton, MO, ³BASF Corporation, Nevada, IA, ⁴BASF Corporation, Southaven, MS, ⁵BASF Corporation, Pikeville, NC, ⁶BASF Corporation, Sabin, MN, ⁷BASF Corporation, Fowler, IN, ⁸BASF Corporation, Leesburg, GA, ⁹BASF Corporation, Seymour, IL, ¹⁰BASF, RTP, NC **(419)**

WEDNESDAY MORNING JANUARY 24

ORAL – 06. Teaching and Extension

LOCATION: Regency F
TIME: 11:00 AM – 12:00 PM Central Time
CHAIR: Debalin Sarangi
University of Minnesota
St. Paul, MN
CO-CHAIR: Liberty B. Galvin
Oklahoma State University
Stillwater, OK

***SPEAKER**

11:00 AM What's in a Name? A Committee Review of the Composite List of Weeds. Theresa Piskackova*¹, Karla L. Gage², Joan Campbell³, Lauren M. Lazaro⁴, Eugene P. Law⁵, Christina Taliga⁶; ¹Czech University of Life Sciences Prague, Prague 6 – Suchbátka, Czechia (Czech Republic), ²Southern Illinois University Carbondale, Carbondale, IL, ³University of Idaho, Moscow, ID, ⁴Blue River Technology, Sunnyvale, CA, ⁵University of Delaware, Beltsville, MD, ⁶USDA-NRCS, Lincoln, NE **(420)**

11:15 AM 2023 Common Problems Survey of Southern Row Crop Extension Weed Specialists. Eric P. Prostko*; University of Georgia, Tifton, GA **(421)**

- 11:30 AM Developing a Decision Support System to Assist Farmers in Incorporating Multiple Effective Modes of Action.** Breanne D. Tidemann*¹, Gregory Innes¹, Christine Cock², Charles M. Geddes³; ¹Agriculture and Agri-Food Canada, Lacombe, AB, Canada, ²Agriculture and Agri-Food Canada, Summerland, BC, Canada, ³Agriculture and Agri-Food Canada, Lethbridge, AB, Canada (422)
- 11:45 AM Effective PRE and POST Programs for Weed Control in Glyphosate/Glufosinate/2,4-D-Resistant Soybean in New York.** Vipin Kumar*¹, Lynn M. Sosnoskie², Mike Stanyard³, Mike Hunter⁴; ¹Cornell University, Ithaca, NY, ²Cornell University, Geneva, NY, ³Cornell University, Newark, NY, ⁴Cornell University, Watertown, NY (423)

WEDNESDAY AFTERNOON JANUARY 24

SYMPOSIUM – Adjuvants Matter: How New Technology and a Changing Marketplace are Creating New Opportunities

LOCATION: Rio Grande Ballroom W/C
 TIME: 1:00 PM – 5:00 PM Central
 Time
 CHAIR: Matt Faletti
 Precision Laboratories
 Kenosha, WI

***SPEAKER**

- 01:00 PM Introduction: Why Adjuvants? Why Now?** Ryan J. Edwards*; WinField United, River Falls, WI (424)
- 01:10 PM Adjuvant Training and the Land Grant University.** Bryan G. Young*; Purdue University, Brookston, IN (425)
- 01:30 PM The Importance of Adjuvants to Agricultural Distributors and Retailers.** Jeff Bunting*; Growmark, Bloomington, IL (426)

- 01:50 PM CPDA – Giving Relevance and Credibility to the Adjuvant Industry.** Terry Kippley*; CPDA, Arlington, VA (427)
- 02:10 PM What Does it Really Mean to Have Good Coverage?** J Connor Ferguson*; Simplot Growers, Yukon, OK (428)
- 02:35 PM Optimizing Droplet Size and Reducing Drift with Novel Deposition Aids.** Susan Sun*; Croda Crop Care, Philadelphia, PA (429)
- 03:00 PM Break**
- 03:15 PM Improvements in CPDA’s Application Enhancement Certification Program, A Novel Tool for Improving Selection of Nozzles & Adjuvants.** James Reiss*¹, Susan Sun², Bradley Fritz³; ¹Council of Producers and Distributors of Agrotechnology, Arlington, VA, ²Croda Crop Care, Philadelphia, PA, ³United States Department of Agriculture, Agricultural Research Service, College Station, TX (430)
- 03:40 PM Adjuvant Use and Opportunity in Drone Applications.** Steve Li*¹, Livia Ianhez Pereira², Thiago Bento Caputti¹; ¹Auburn University, Auburn, AL, ²University of Nebraska-Lincoln, North Platte, NE (431)
- 04:05 PM Role of New Technologies in the Evaluation and Requirements for Adjuvants.** William L. Patzoldt*¹, Lauren M. Lazaro¹, Michael M. Houston², Jesaelen Gizotti de Moraes³; ¹Blue River Technology, Sunnyvale, CA, ²Blue River Technology, Greenville, MS, ³Blue River Technology, Santa Clara, CA (432)
- 04:30 PM Panel Discussion**

WEDNESDAY AFTERNOON JANUARY 24

ORAL – WSSA SST – Finals

LOCATION: Regency H

TIME: 1:00 PM – 2:00 PM Central Time

CHAIR: Marty Schraer

SST Finals

*SPEAKER † STUDENT CONTEST

WEDNESDAY AFTERNOON JANUARY 24

ORAL – 03. Turf and Ornamentals

LOCATION: Regency F
TIME: 1:00 PM – 3:00 PM Central
Time
CHAIR: Navdeep Godara
Virginia Tech
Blacksburg, VA
CO-CHAIR: Shawn Askew
Virginia Tech
Blacksburg, VA

Oral Turf and Ornamentals Section

*SPEAKER

01:00 PM Exploring Warm-Season Turfgrass Tolerance to Natural Alternative Weed Control Methods.
Jacob W. Taylor*, Lambert B. McCarty, Timothy Stoudemayer; Clemson University, Clemson, SC
(433)

01:15 PM Late Season Poa Annua Control on Non-overseeded Tifeagle Green – Glufosinate Vs. Diquat. Derrick H. Taylor*, Lambert B. McCarty, Timothy Stoudemayer; Clemson University, Clemson, SC (434)

01:30 PM Unraveling the Mechanism of Quinclorac Resistance in Smooth Crabgrass (*Digitaria ischaemum*). Claudia A. Rutland*¹, Todd A. Gaines², Eric L. Patterson³, Luan Cutti⁴, Brian Zeka⁵, Victor Llaca⁶, Jinesh Patel⁷, Sejal Patel⁷, Joseph S. McElroy⁷; ¹Auburn University Department of Crop, Soil, and Environmental Sciences, Auburn, AL, ²Colorado State University, Fort Collins, CO, ³Michigan State University, East Lansing, MI, ⁴Federal University of Rio Grande do Sul, Porto Alegre, Brazil, ⁵Corteva, Johnston, IA,

⁶Corteva Agriscience, Johnston, IA, ⁷Auburn University, Auburn, AL (435)

- 01:45 PM Sources of Error Associated with Targeted Application Equipment.** Shawn Askew*, John M. Peppers; Virginia Tech, Blacksburg, VA (436)
- 02:00 PM Smooth Crabgrass and Goosegrass Control During Bermudagrass Establishment.** Navdeep Godara*¹, Daewon Koo¹, Hannah Wright Smith², Shawn Askew¹; ¹Virginia Tech, Blacksburg, VA, ²University of Arkansas, Little Rock, AR (437)
- 02:15 PM Investigating Herbicide Strategies for Doveweed (*Murdannia nudiflora*) Control.** Bridgette C. Johnson*, Joseph S. McElroy; Auburn University, Auburn, AL (438)
- 02:30 PM Will Robotics Revolutionize Weed Control in Turf?** Juan Romero*, Shawn Askew; Virginia Tech, Blacksburg, VA (439)
- 02:45 PM Mid- to Late-Season Post-Emergent Control of Virginia Buttonweed.** Adam Gore*, Lambert B. McCarty, Timothy Stoudemayer; Clemson University, Clemson, SC (440)
- 03:00 PM Section Business Meeting**

WEDNESDAY AFTERNOON JANUARY 24

ORAL – 13. Student Travel Enrichment Experience/ Science Policy Fellow Update

LOCATION: Regency H
TIME: 2:30 PM – 5:00 PM Central Time
MODERATOR: Cara L. McCauley
Corteva Agriscience
Indianapolis, IN

***SPEAKER**

- 02:30 PM Tour of Texas Agriculture: 2023 Travel Enrichment Experience.** Victor Ribeiro*; Oregon State University, Corvallis, OR (441)

- 02:45 PM Discovering Various Career Paths in Industry.** Eli C. Russell*; Virginia Tech, Blacksburg, VA (442)
- 03:00 PM Break**
- 03:15 PM My Travel Enrichment Experience with Blue River Technology.** Jeanine Arana*; Purdue University/Horticulture, West Lafayette, IN (443)
- 03:30 PM Travel Enrichment Experience with Corteva Agriscience in Sacramento, California.** Isabelle Aicklen*; University of Guelph, Guelph, ON, Canada (444)
- 03:45 PM Weeds, Insects, Diseases, and New Fashion Trends: A Week with Dr. James Holloway in West Tennessee.** Cynthia Sias*¹, James C. Holloway Jr²; ¹Virginia Tech, Blacksburg, VA, ²Syngenta Crop Protection, LLC, Jackson, TN (445)
- 04:00 PM Science Policy Fellowship: an Insight into the Executive Director of Science Policy, ESA, and Federal Grants.** Cynthia Sias*¹, Annu Kumari², Lee Van Wyche³; ¹Virginia Tech, Blacksburg, VA, ²Crop, Soil & Environmental Sciences Department, Auburn University, Auburn, AL, ³Weed Science Society of America, Alexandria, VA (446)
- 04:15 PM Industry Pipelines from Screening and Fieldwork to Regulatory Processes and Product Marketing: Travel Enrichment Experience with FMC.** Annu Kumari*; Crop, Soil & Environmental Sciences Department, Auburn University, Auburn, AL (447)
- 04:30 PM 2023 Endowment Enrichment Scholarship: Envisioning the Perspectives of Corporate Leaders Through a Week-Long Educational Experience in Bayer Crop Science.** Navdeep Godara*; Virginia Tech, Blacksburg, VA (448)

WEDNESDAY AFTERNOON JANUARY 24

ORAL – 11. Soil and Environmental Aspects

LOCATION: Regency F
TIME: 3:15 PM – 5:15 PM Central
Time

CHAIR: Cameron Douglass
USDA
Washington, DC

CO-CHAIR: Kayla Eason
USDA
Tifton, GA

SPEAKER

03:15 PM Examining Dicamba Volatility from a Broadcast Tankmix vs See & Spray Split Boom Application of Dicamba and Glufosinate. Larry Steckel*¹, Thomas C. Mueller²; ¹University of Tennessee, Jackson, TN, ²University of Tennessee, Knoxville, TN **(449)**

03:30 PM Pyroxasulfone Impregnated Onto Dry Fertilizer: Efficacy and Residual Concentrations in Equipment. Greg Stapleton*¹, Thomas C. Mueller², Larry Steckel³; ¹BASF, Dyresburg, TN, ²University of Tennessee, Knoxville, TN, ³University of Tennessee, Jackson, TN **(450)**

03:45 PM The Relationship Between Palmer Amaranth Control, Expected Dicamba Emissions, and Label Adherence Under Field Conditions in Tennessee. Thomas C. Mueller*¹, Larry Steckel²; ¹University of Tennessee, Knoxville, TN, ²University of Tennessee, Jackson, TN **(451)**

04:00 PM Fomesafen, Oxyfluorfen, and Terbacil Dissipation from Soil Covered with Low-Density Polyethylene Mulch or Left Bare. Annabelle E. McEachin*¹, Timothy L. Grey², Kayla M. Eason³, A Stanley Culpepper², Jenna C. Vance²; ¹University of Georgia Crop and Soil Sciences, Tifton, GA, ²University of Georgia, Tifton, GA, ³United States Department of Agriculture, Tifton, GA **(452)**

04:15 PM Auxin Herbicide Formulation Thermal Stability Over Time. Timothy L. Grey*¹, William K. Vencill², Kayla M. Eason³; ¹University of Georgia, Tifton, GA, ²University of Georgia, Athens, GA, ³United States Department of Agriculture, Tifton, GA (453)

04:30 PM Quantifying Herbicide Accumulation in the Transplant Hole from Surface Application to Low Density Polyethylene Mulch. Kayla M. Eason*¹, Timothy L. Grey², A Stanley Culpepper²; ¹United States Department of Agriculture, Tifton, GA, ²University of Georgia, Tifton, GA (454)

04:45 PM Evaluating ‘Soil Detoxifiers’ to Mitigate Crop Injury from Off-Label Residual Herbicides. Andrew R. Kniss*; University of Wyoming, Laramie, WY (455)

05:00 PM Section Business Meeting

WEDNESDAY AFTERNOON JANUARY 24

WSSA/SWSS Joint Student and Photo Awards

LOCATION: Regency E
TIME: 5:30 PM – 7:30 PM Central
 Time
CHAIR: Marty Schraer
 Syngenta
 Meridian, ID
CO-CHAIR: Pratap Devkota
 Syngenta
 Vero Beach, FL

WEDNESDAY AFTERNOON JANUARY 24

Iron Cactus Tequila Tasting Tour

LOCATION: Meet in Lobby
TIME: 5:30 PM – 7:30 PM Central
 Time

WEDNESDAY AFTERNOON JANUARY 24

BASF Sponsored Reception

LOCATION: Rio Grande Ballroom
TIME: 7:30 PM – 9:30 PM Central
Time

Open to All Attendees

THURSDAY MORNING JANUARY 25

WSSA Business Breakfast

LOCATION: Live Oak
TIME: 6:30 AM – 8:00 AM Central
Time
MODERATOR: Carroll Moseley
Syngenta
Brown Summit, NC, NC
CO-MODERATOR: Gregory K. Dahl
Winfield United – Retired
Eagan, MN

***SPEAKER**

THURSDAY MORNING JANUARY 25

**SYMPOSIUM – Herbicide Resistant Weeds:
Identification, Documentation, and Regulation**

LOCATION: Rio Grande Ballroom W/C
TIME: 8:00 AM - 12:00 PM Central
Time
CHAIR: Craig M. Alford
Corteva
Ankeny, IA

***SPEAKER**

- 08:00 AM What it Takes to Get A Weed Listed in the International Survey of Herbicide Resistant Weeds.** Ian Heap*; Weedsience LLC, Philomath, OR **(456)**
- 08:30 AM Historical Survey of Herbicide Resistance Cases. New Technologies Challenge for an Update of Resistance Criteria.** Roland S. Beffa*¹, Craig M. Alford², Mark Peterson³, Caio Rossi⁴, David M. Simpson⁵, Harry J. Strek⁶, Ian Heap⁷; ¹Senior Scientist Consultant, Frankfurt, Germany, ²Corteva, Ankeny, IA, ³Agri-logos Consulting, West Lafayette, IN, ⁴Corteva Agriscience // HRAC Global, Uberlandia, Brazil, ⁵Corteva, Indianapolis, IN, ⁶Bayer AG, Frankfurt Am Main, Germany, ⁷Weedsience LLC, Philomath, OR **(457)**
- 09:00 AM Case Study: Weed Screening Results for Label Requirements for Herbicide Tolerant Crops.** Chandrashekar C. Aradhya*; Bayer CropScience, Chesterfield, MO **(458)**
- 09:30 AM Case Study: Weed Screening Results - University Experience.** Bryan G. Young*¹, Kevin W. Bradley², Jason K. Norsworthy³; ¹Purdue University, Brookston, IN, ²University of Missouri, Columbia, MO, ³University of Arkansas, Fayetteville, AR **(459)**
- 10:00 AM Break**
- 10:15 AM Regulatory Perspectives on the Potential Value of Herbicide Resistance Screening.** Cameron H. Douglass*; USDA, Washington, DC **(460)**
- 10:45 AM Connecting the International Weed Genomics Consortium with Herbicide Resistant Weed Screening.** Todd A. Gaines*¹, Eric L. Patterson², Mithila Jugulam³, Roland S. Beffa⁴, Dana R. MacGregor⁵; ¹Colorado State University, Fort Collins, CO, ²Michigan State University, East Lansing, MI, ³Kansas State University, Manhattan, KS, ⁴Senior Scientist Consultant, Frankfurt, Germany, ⁵Rothamsted Research, Harpenden, United Kingdom **(461)**
- 11:15 AM Discussion**

THURSDAY MORNING JANUARY 25

ORAL - 17. Targeted and Autonomous Weed Control Technologies

LOCATION: Regency H
TIME: 8:30 AM - 12:00 PM Central Time
CHAIR: Nathan Boyd
University of Florida
Balm, FL
CO-CHAIR: Luis A. Avila
Mississippi State University
Mississippi State, MS

***SPEAKER**

- 08:30 AM Increasing Weed Detection Accuracy on UAV and Ground Imaging Systems by Training Machine Learning Models with Synthetic Data Generated from 3D Models.** Nicholas J. Witthoeft¹, Dimitris Zermas¹, Henry Nelson¹, Andrew A. Muehlfeld*²; ¹Sentera, Inc., Saint Paul, MN, ²Sentera, Inc., Apex, NC **(462)**
- 08:45 AM Nonchemical Approaches to Managing Italian Ryegrass in Hazelnut Orchards.** Marcelo L. Moretti*; Oregon State University, Corvallis, OR **(463)**
- 09:00 AM The Potential Benefits of Targeted Herbicide Application on Row Middles.** Ana Claudia Buzanini*¹, Nathan Boyd², Arnold W. Schumann³, Renato Herrig Furlanetto¹; ¹University of Florida, Wimauma, FL, ²University of Florida, Balm, FL, ³University of Florida, Lake Alfred, FL **(464)**
- 09:15 AM Evaluation of Soybean Injury to Low Volume Applications as Influenced by Application Type and Spray Volume.** Livia Pereira*, Ryan D. Langemeier, Justin T. McCaghren, Steve Li; Auburn University, Auburn, AL **(465)**
- 09:30 AM Advancing Computer Vision in Agricultural Weed Recognition: Dataset Development and Model Benchmarking.** Matthew Kutugata*¹,

Chris Reberg-Horton², Søren K. Skovsen³, Maria Laura Cangiano², Muthukumar V. Bagavathiannan⁴, Steven Brian Mirsky⁵; ¹Texas A&M, College Station, TX, ²North Carolina State University, Raleigh, NC, ³Aarhus University, Aarhus, Denmark, ⁴Texas A&M University, College Station, TX, ⁵USDA ARS, Beltsville, MD (466)

09:45 AM My Opinion: Targeted Weed Management is the Future of Weed Management. Nathan Boyd*; University of Florida, Balm, FL (467)

10:00 AM Break

10:15 AM Evaluating See & Spray™ Premium as a Single Tank Option for Weed Management. Robert S. Brown*¹, William L. Patzoldt², Chad Yagow³, Gaylia Ostermeier⁴; ¹Blue River Technology, Wentzville, MO, ²Blue River Technology, Sunnyvale, CA, ³John Deere, Champaign, IL, ⁴John Deere, Slater, IA (468)

10:30 AM Bridging Computer Vision and Weed Recognition: Developing a Collaborative Open-source Image Repository Using a Bench-robot. Navjot Singh*¹, Matthew Kutugata¹, Søren K. Skovsen², Maria Laura Cangiano³, Chris Reberg Horton³, Muthukumar V. Bagavathiannan⁴, Steven Brian Mirsky⁵; ¹Texas A&M, College Station, TX, ²Aarhus University, Aarhus, Denmark, ³NCSU, Raleigh, NC, ⁴Texas A&M University, College Station, TX, ⁵USDA ARS, Beltsville, MD (469)

10:45 AM See & Spray™ Ultimate - Development and Evaluation for Weed Management in Agronomic Crops. William L. Patzoldt*¹, Robert S. Brown², Chad Yagow³, Gaylia Ostermeier⁴; ¹Blue River Technology, Sunnyvale, CA, ²Blue River Technology, Wentzville, MO, ³John Deere, Champaign, IL, ⁴John Deere, Slater, IA (470)

11:00 AM Optimizing Herbicide Savings in Plasticulture Production: A Simulation Approach Using AI and Different Nozzle Setups. Renato Herrig Furlanetto*¹, Ana Claudia Buzanini¹, Arnold W. Schumann², Nathan Boyd³; ¹University of Florida, Wimauma, FL, ²University of Florida, Lake Alfred, FL, ³University of Florida, Balm, FL (471)

11:15 AM Specialized Nozzle Tips for Targeted Spray Applications Using John Deere's See & Spray(TM) Technology. Jesaalen Gizotti de

Moraes*¹, Trevor Stanhope², Scott Brown³, William L. Patzoldt⁴, Chad Yagow⁵, Gaylia Ostermeier⁶, Nick Fleitz⁷; ¹Blue River Technology, Santa Clara, CA, ²Blue River Technology, Chicago, IL, ³Blue River Technology, St. Louis, MO, ⁴Blue River Technology, Sunnyvale, CA, ⁵John Deere, Champaign, IL, ⁶John Deere, Slater, IA, ⁷Pentair Hypro, Shepherdsville, KY **(472)**

11:30 AM International Weed Recognition Consortium (IWRC): Facilitating the Development and Use of Digital Imagery for Weed Research and Management Applications. Muthukumar V. Bagavathiannan*¹, Michael Walsh², Nathan Boyd³, Steven Brian Mirsky⁴; ¹Texas A&M University, College Station, TX, ²University of Sydney, Narrabri, Australia, ³University of Florida, Balm, FL, ⁴USDA ARS, Beltsville, MD **(473)**

11:45 AM Section Business Meeting

THURSDAY MORNING JANUARY 25

ORAL - 02. Horticultural Crops

LOCATION: Regency F
TIME: 8:45 AM - 12:00 PM Central Time
CHAIR: Thierry E. Besancon
Rutgers University
Chatsworth, NJ

CO-MODERATOR: Greg Steele
Bayer Crop Science
Hillsboro, TX

***SPEAKER**

08:45 AM Estimating Cover Crops Weed Suppression in Row-Middles of Citrus Orchards. Miurel T. Brewer*¹, Sarah L. Strauss², Carlene A. Chase³, Brent A. Sellers⁴, Davie M. Kadyampakeni², Ramdas Kanissery⁵; ¹University of Florida, Lake Alfred, FL, ²University of Florida, Gainesville, FL, ³University of Florida, Horticultural Sciences Department, Gainesville, FL, ⁴University of

Florida, Ona, FL, ⁵University of Florida - IFAS, Immokalee, FL (474)

- 09:00 AM Exploring the Efficacy of New Herbicides for Postemergence Control of Italian Ryegrass in Hazelnut Orchards.** Joshua W. Miranda*, Marcelo L. Moretti; Oregon State University, Corvallis, OR (475)
- 09:15 AM Improved Herbicide Selectivity in Tomato by Safening Action of Benoxacor, Fenclorim, Melatonin and 2,4,6 - Trichlorophenoxyacetic Acid.** Dante Elias*¹, Tabata Raissa De Oliveira², Antonio Augusto Correa Tavares³, Varsha Varsha⁴, Josiane C. Argenta¹, Te-Ming (Paul) Tseng⁵; ¹Mississippi State University, Starkville, MS, ²Mississippi State University, Starkville, Ms, MS, ³University of Nebraska-Lincoln, North Platte, NE, ⁴Department of Plant and Soil Sciences, Mississippi State University, Starkville, MS, ⁵Mississippi State University, Mississippi State, MS (476)
- 09:30 AM IR-4 Weed Science Update - Food Crops.** Roger B. Batts*; IR-4 Project HQ, NC State University, Raleigh, NC (477)
- 09:45 AM Effect of Spacing and Weed Control Treatments on the Performance and Profitability of Cabbage (*Brassica oleracea*) in Zaria Nigeria.** M. A. Babawuro*¹, Usman Ibrahim²; ¹Federal College of Horticulture, Dadinkowa, Gombe, Nigeria, ²Ahmadu Bello University, Zaria, Zaria, Nigeria (478)
- 10:00 AM Break**
- 10:15 AM Evaluating Sweetpotato (*Ipomoea batatas*) Tolerance to Herbicides Applied Post-transplant.** Stephen J. Ippolito*, Katherine M. Jennings, David W. Monks, David L. Jordan, Levi D. Moore, Adrienne M. Gorny; North Carolina State University, Raleigh, NC (479)
- 10:30 AM Evaluating Spring-Seeded Cover Crop Termination Timing for Weed Control in Watermelon.** Kurt M. Vollmer*¹, Thierry E. Besancon², Carrie Mansue³; ¹University of Maryland, Queenstown, MD, ²Rutgers University, Chatsworth, NJ, ³Rutgers University, Mays Landing, NJ (480)

- 10:45 AM Glufosinate and 2,4-D Choline as Novel Postemergence Herbicides in Blackberry Production.** Matthew B. Bertucci*, Rachel C. Woody-Pumford, Ali Ablao; University of Arkansas, Fayetteville, AR **(481)**
- 11:00 AM Weed Control with Saturated Steam in Organic Highbush Blueberry (*Vaccinium corymbosum*).** Rafael M. Pedroso*¹, Marcelo L. Moretti²; ¹University of Sao Paulo, Piracicaba, Brazil, ²Oregon State University, Corvallis, OR **(482)**
- 11:15 AM Yellow Nutsedge and Canada Thistle Response to Electricity and Mowing.** Luisa C. Baccin*, Marcelo L. Moretti; Oregon State University, Corvallis, OR **(483)**
- 11:30 AM Does the Critical Weed Free Period for Transplanted Hemp Depend on Weed Species Involved?** Harlene M. Hatterman-Valenti*, Brock Schulz, Mason Hill, Avery Shikanai, Collin Auwarter; North Dakota State University, Fargo, ND **(484)**
- 11:45 AM Implementing Digital Multispectral 3D Scanning Technology for Rapid Assessment of Hemp (*Cannabis Sativa* L.) Weed Competitive Traits.** Matthew A. Cutulle*¹, Gursewak Singh², Lynn M. Sosnoskie³, Michael L. Flessner⁴, Harlene M. Hatterman-Valenti⁵, Karla L. Gage⁶; ¹Clemson University, Charleston, SC, ²Clemson University, Clemson, SC, ³Cornell University, Geneva, NY, ⁴Virginia Tech, Blacksburg, VA, ⁵North Dakota State University, Fargo, ND, ⁶Southern Illinois University Carbondale, Carbondale, IL **(485)**
- 12:00 PM Section Business Meeting**

THURSDAY MORNING JANUARY 25

ORAL - 04. Pasture, Range, Forest, & Rights of Ways, Wildland, and Aquatic Invasive plants

LOCATION: Rio Grande East
 TIME: 9:00 AM - 12:00 PM Central Time
 CHAIR: Byron B. Sleugh
 Corteva Agriscience

CO-CHAIR: Carmel, IN
David C. Clabo
University of Georgia
Tifton, GA

Pasture, Range, Forest, Rights of Way, and Wildland and Aquatic Invasive Species.

***SPEAKER**

- 09:00 AM Use of Glufosinate, Imazapyr, and Glyphosate to Control Hardwoods in Pine Plantations.** Andrew W. Ezell*¹, Andrew B. Self², John E. Ezell³; ¹Mississippi State University, Miss. State, MS, ²Mississippi State University-Department of Forestry, Grenada, MS, ³Mississippi State University, Starkville, MS **(487)**
- 09:15 AM A Comparison of Imazapyr, Glufosinate and Glyphosate for Control of Natural Pines.** John E. Ezell*¹, Andrew B. Self², Andrew W. Ezell³; ¹Mississippi State University, Starkville, MS, ²Mississippi State University-Department of Forestry, Grenada, MS, ³Mississippi State University, Miss. State, MS **(488)**
- 09:30 AM Controlling Natural Pine with Site Preparation Applications Using Vastlan, Vista XRT, Garlon XRT, Accord XRT, Glufosinate Ammonium, and Chopper GEN2.** Andrew B. Self*¹, John E. Ezell², Andrew W. Ezell³; ¹Mississippi State University-Department of Forestry, Grenada, MS, ²Mississippi State University, Starkville, MS, ³Mississippi State University, Miss. State, MS **(489)**
- 09:45 AM Efficacy of Controlling Wilding Pine During Forestry Site Preparation with Non-Glyphosate Options in the Upper Coastal Plain of Georgia.** David C. Clabo*¹, David Dickens²; ¹University of Georgia, Tifton, GA, ²University of Georgia Warnell School of Forestry & Natural Resources, Statesboro, GA **(490)**
- 10:00 AM Break**
- 10:15 AM Control of Hemp Dogbane (*Apocynum cannabinum*) Using Auxinic Herbicides for Pasture and Right-of-Ways.** Kayla L. Broster*¹, John D. Byrd, Jr.¹, Thomas H. Duncan², Chris R. Gregory²; ¹Mississippi State University,

Mississippi State, MS, ²Mississippi State University, Starkville, MS (491)

- 10:30 AM Improving the Best Management Practice for Invasive Grass Species in Australia – A Cooperative Approach.** Ali Ahsan Bajwa*; La Trobe University, Melbourne, Australia (492)
- 10:45 AM Influence of Liquid Urea Ammonium Nitrate When Co-applied with Hexazinone for Smutgrass (*Sporobolus jacquemontii*) Control.** Sudip Regmi*¹, Brent A. Sellers², Jose Dubeux³, Temnotfo Mncube²; ¹MS Student, Department of Agronomy, University of Florida, Phalewas, Nepal, ²University of Florida, Ona, FL, ³University of Florida, Mariana, FL (493)
- 11:00 AM Wilding Loblolly Pine (*Pinus taeda*) Control Using Imazapyr and Glufosinate Tank Mixes.** David C. Clabo*¹, E David Dickens²; ¹University of Georgia, Tifton, GA, ²University of Georgia, Athens, GA (494)
- 11:15 AM Sandbur Distribution and Sensitivity to Recommended Herbicides in East Texas.** Zachary S. Howard*¹, Scott A. Nolte²; ¹Texas A&M, College Station, TX, ²Texas A&M AgriLife Extension, College Station, TX (495)
- 11:30 AM Perennial and Annual Weed Control in Warm Season Pastures.** Keegan T. Crawford*; Texas A&M University, College Station, TX (496)
- 11:45 AM Section Business Meeting**

THURSDAY MORNING JANUARY 25

ORAL - 10. Physiology

LOCATION: Regency G
TIME: 9:00 AM - 12:00 PM Central
Time
CHAIR: Chad Brabham
FMC
Newark, DE
CO-CHAIR: Thomas R. Butts
University of Arkansas System
Division of Agriculture
Lonoke, AR

***SPEAKER**

- 09:00 AM Discovery and Mode-of-Action Characterization of a New Class of Diaryl-Ether Herbicides.**
Hudson K. Takano*, Chris Kalnmals, Moriah Zielinski, Norbert Satchivi, Josh Roth, Jeff Church, Adel Hamza, Dilpreet Riar, Zoltan Benko; Corteva Agriscience, Indianapolis, IN (497)
- 09:15 AM Mechanisms of Resistance to VLCFA Biosynthesis Inhibitors in *Lolium* spp. and the Role of Commercial Varieties in Resistance Spread.** Rebecka Duecker*¹, Eric L. Patterson¹, Roland S. Beffa², Jean Wagner³; ¹Michigan State University, East Lansing, MI, ²Senior Scientist Consultant, Frankfurt, Germany, ³Georg-August Universität Göttingen, Göttingen, Germany (498)
- 09:30 AM The Nexus Between Reactive Oxygen Species and the Mechanism of Action of Herbicides.**
Catherine J. Traxler*¹, Todd A. Gaines¹, Anita Küpper², Peter Luemmen², Franck E. Dayan¹; ¹Colorado State University, Fort Collins, CO, ²Bayer AG, Frankfurt, Germany (499)
- 09:45 AM Bouquet Stage of Meiosis May Have Provided a Mechanism for EPSPS Gene Amplification in Glyphosate-Resistant Windmill Grass (*Chloris truncata*).** Mithila Jugulam*¹, Mazhar Islam¹, Bikram S. Gill¹, Christopher Preston², Jenna Malone²; ¹Kansas State University, Manhattan, KS, ²University of Adelaide, Adelaide, Australia (500)
- 10:00 AM Break**

- 10:15 AM Evaluation and Potential Mode of Action of Novel Antimicrobial Analogues for Control of Yellow Nutsedge (*Cyperus esculentus*).** Gregory R. Armel*¹, James Brosnan², Nilda Roma-Burgos³, Peter J. Porpiglia⁴, Jose J. Vargas⁵; ¹AMVAC Chemical Corporation, Rocky Mount, NC, ²University of Tennessee, Knoxville, TN, ³University of Arkansas, Fayetteville, AR, ⁴AMVAC Chemical Corporation, Newport Beach, CA, ⁵University of Tennessee, Knoxville, TN (501)
- 10:30 AM A Multi-Omics Approach to Investigate the Mechanism of Clopyralid Resistance in Common Ragweed.** Nash D. Hart¹, Ednaldo A. Borgato*², Eric L. Patterson³, Erin E. Burns³; ¹Michigan State University, Durand, MI, ²Kansas State University, Manhattan, KS, ³Michigan State University, East Lansing, MI (502)
- 10:45 AM I.W.G.C. Kochia Genome Impacts on Management Strategies.** Philip Westra*¹, Todd A. Gaines¹, Eric L. Patterson², Eric P. Westra¹, John M. Lemas¹, Jacob S. Montgomery¹; ¹Colorado State University, Fort Collins, CO, ²Michigan State University, East Lansing, MI (503)
- 11:00 AM Persistence of Target Site Mutation in Palmer Amaranth (*Amaranthus palmeri*) After 10 Years.** Prakriti Dhaka*¹, Matheus Machado Noguera², Juan Camilo Velásquez R², Gulab Rangani², Felipe K. Salto², Nilda Roma-Burgos²; ¹University of Arkansas, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR (504)
- 11:15 AM Tetflupyrolimet: Discovery of its Novel Herbicide Site-of-Action Dihydroorotate Dehydrogenase (DHODH) Inhibition.** Chad Brabham*¹, Steven Gutteridge¹, Sang-Ic Kim¹, Ryan Emptage¹, Il-Ho Kang¹, Atul Puri²; ¹FMC Corporation, Newark, DE, ²FMC, Newark, DE (505)
- 11:30 AM GS2 Amplification in Glufosinate-Resistant *Amaranthus palmeri* (Palmer Amaranth) is eccDNA-Mediated.** Matheus Machado Noguera*¹, Patrice Albert², Lucas Kopecky Bobadilla³, Christopher A. Saski⁴, Aimone Porri⁵, Ingo Meiners⁶, James A. Birchler², Patrick Tranel⁷, Nilda Roma-Burgos⁸; ¹GreenLight Biosciences, Sacramento, CA, ²University of Missouri, Columbia, MO, ³Corteva, Indianapolis, IN, ⁴Clemson University, Clemson, SC, ⁵BASF Global

Research & Development, Limburgerhof,
Germany, ⁶BASF, RTP NC, ⁷University of Illinois,
Urbana, IL, ⁸University of Arkansas, Fayetteville,
AR (506)

11:45 AM **Section Business Meeting**

THURSDAY AFTERNOON JANUARY 25

SWSS Board of Directors Meeting

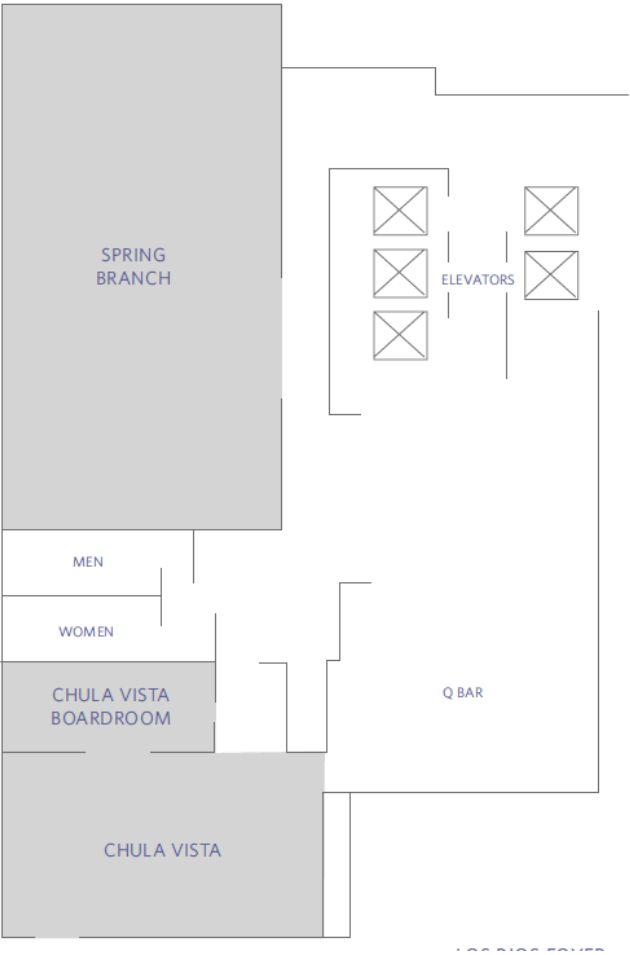
LOCATION: Live Oak
TIME: 1:00 PM - 2:00 PM Central
 Time
MODERATOR: Todd A. Baughman
 Oklahoma State University
 Ardmore, OK
CO-MODERATOR Eric W. Palmer
 Syngenta
 Greensboro, NC

WSSA Board of Directors Meeting

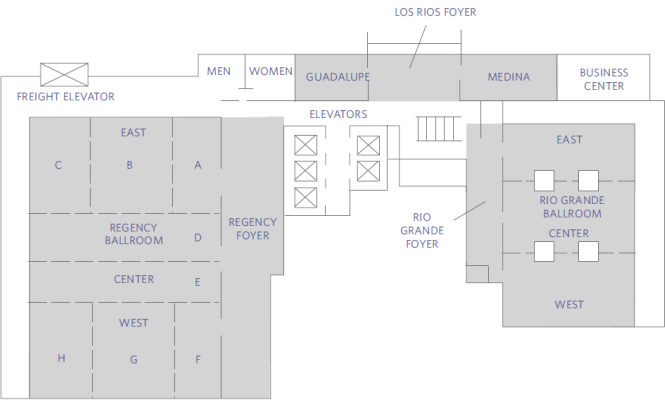
LOCATION: Live Oak
TIME: 2:00 PM - 3:00 PM Central
 Time
MODERATOR: Gregory K. Dahl
 Winfield United - Retired
 Eagan, MN
CO-MODERATOR: Hilary A. Sandler
 UMass Cranberry Station
 East Wareham, MA

Hyatt Regency San Antonio

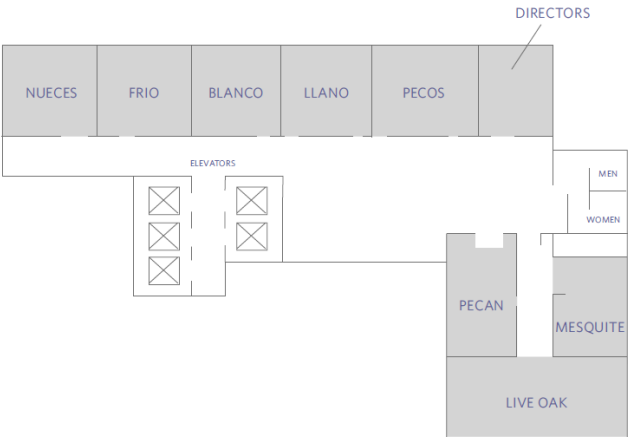
Lobby Level



Ballroom Level



Hill Country Level



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The WSSA Code of Ethics defines professional conduct binding on all members of the Society. Members should recognize that this code of ethics and conduct signifies a voluntary assumption of the obligation of self-discipline and members should strive to uphold and maintain the honor and dignity of the Society. The following rules and standards of conduct have been developed for the safe and efficient operation of the WSSA and for the benefit and protection of the rights and safety of all. WSSA members are expected to observe the highest standards of professional conduct at all times, while at work or engaged in Society business.

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5. Promote a culture of respect for all WSSA members. The WSSA supports and adheres to laws and regulations dealing with fair member practices. Membership discrimination in our Society based on sex, race, age, religion, national origin, or sexual preference will not be tolerated. Sexual harassment will not be tolerated. Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that explicitly or implicitly affects an individual's membership in the society, unreasonably interferes with an individual's activities within the society, or creates an intimidating, hostile or offensive society environment. This also includes inappropriate use of nudity and/or sexual images in public spaces (including within visual presentations, Twitter, and other online media); deliberate intimidation, stalking, or unwelcome following; harassing photography or recording; and sustained disruption of talks or other events.

6. Use your best efforts to maintain a safe environment and protect the Society. The WSSA believes in and supports the laws designated to keep our Society safe and designed to protect the environment. If you believe that an unsafe condition exists in our Society, bring it immediately to the attention of the President, a member of the Board, or Executive Secretary. If an accident takes place, report it pursuant to policy and immediately take action to address the problem. Any incident or situation that violates the law or this policy should be immediately reported to the President and/or Executive Secretary; in person or via this contact information: info@wssa.net or 720-445-4789.

7. Promote an ethical culture for all WSSA members. The WSSA always expects all of its members to conduct themselves ethically and to encourage and support that behavior in their fellow members. Members exercise integrity in scientific research activities and in the reporting of results.

8. Relation of professionals to the public. They shall not knowingly permit the publication of reports or other documents for any unsound or illegitimate undertaking.

9. Respect fellow WSSA members. Members shall freely give credit for work done by others to whom the credit is due and shall refrain from plagiarism in oral and written communication, and not knowingly accept credit rightfully due to another person.

10. Reporting alleged violations. Violation of the WSSA Code of Ethics and Conduct may subject a member to disciplinary action up to and including membership revocation. At the annual conference, when "Safe WSSA" members become aware of a complaint, they will seek out the alleged victim(s) and offender(s) separately and gather facts. Immediate responses at the conference may range from warning a harasser to cease his or her behavior immediately, to ending a speaker's talk early if

the speaker uses inappropriate language or images, to requiring a harasser to leave the conference immediately with no refund, to banning a harasser from future events “either indefinitely or for a certain time period.” Law enforcement may be engaged if circumstances require.

PERSONAL TIME SCHEDULE

Time	Monday		Tuesday	Wednesday	Thursday
6:30					
7:00					
7:30					
8:00			Poster Session	Poster Session	
8:30					
9:00					
9:15					
9:30					
9:45					
10:00					
10:15					
10:30					
10:45					
11:00					
11:15					
11:30					
11:45					
Noon					
1:00					
1:15					
1:30					
1:45					
2:00					
2:15					
2:30					
2:45					
3:00					
3:15					
3:30					
3:45					
4:00	General Session and Awards Presentation				
4:15					
4:30					
4:45					
5:00					
5:30					
6:00					
6:30					
7:00		Awards Reception			
7:30					
8:00					
8:30					
9:00					

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