

2022 National Fusarium Head Blight Forum

December 4-6, 2022



PROGRAM BOOK

GRAND HYATT TAMPA BAY
TAMPA, FLORIDA

Welcome to the 2022 National FHB Forum

The USWBSI is pleased to bring the community back together in person to gain the latest insights from scientific presentations and poster sessions on Fusarium Head Blight (scab) and deoxynivalenol (DON) impacts on wheat and barley.

Special thanks to the USWBSI 2022 Forum Organizing Committee (FOC)

Co-Chairs

Carl Schwinke, Siemer Milling Co. and Alyssa Collins, The Pennsylvania State University

Members

FHB Management

Ce Yang, University of Minnesota and Alyssa Koehler, University of Delaware

Food Safety & Toxicology

Jiajia Rao, North Dakota State University and Xiang Yin, Rahr Malting Corp.

Gene Discovery and Engineering Resistance

Guihua Bai, USDA-ARS and Nidhi Rawat, University of Maryland



Pathogen Biology and Genetics

Peter Oppenheimer, North Carolina State University and Imane Laraba, USDA-ARS

Variety Development and Host Resistance

Nicholas Santantonio, Virginia Tech and Shengming Yang, USDA-ARS

Quick Tips

- Your **name badge** serves as your ticket for food functions, make sure to wear at all times. Included in your registration: Sunday reception/dinner, Monday breakfast, lunch and reception and Tuesday breakfast as well as all breaks.
- Several **sessions are being recorded** and will be made available for attendees after the Forum, watch for a separate email with details.
- A **virtual poster room** is available in addition to the onsite poster sessions, <https://scabusa.org/scripts/VPosters/>  Virtual Poster Room QR
- **Abstracts** for all presentations and posters are available for online viewing <https://scabusa.org/scripts/forum/abstracts.php?fy=2022>  Online Abstract QR
- A small meeting room is open for use during the Forum, check in at registration for availability.
- Photos will be taken during the Forum, by registering you agree to allow USWBSI to use your photo in publications and on the scabusa.org website.
- In the event you feel ill or have exposure or symptoms of COVID after you arrive in Tampa, you agree not to attend the Forum and are requested to notify the USWBSI-NFO call 517.290.5023 or email nfo@scabusa.org.
- Follow [@USWBSI](#) on Twitter or [LinkedIn](#); for posts about the NFHB Forum use the hashtag **#nfhbforum22**.
- In case of emergency, please notify USWBSI's Director of Operations Michelle Bjerkness (612.990.5032).
- The 2022 National FHB Forum is being held at the [Grand Hyatt Tampa Bay, 2900 Bayport Drive, Tampa, Florida, 33607](#)

Research Area Acronyms

The following are used throughout the program to reference areas of focus for presentations and posters.

FST - Food Safety & Toxicology

GDER - Gene Discovery and Engineering Resistance

MGMT - FHB Management

PBG - Pathogen Biology and Genetics

VDHR - Variety Development and Host Resistance

Special thanks to all the 2022 NFHB Forum Sponsors!

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>> Mark your calendar for the 2023 NFHB Forum!

National Fusarium Head Blight Forum
December 3-5, 2023
Cincinnati Netherland Plaza | Cincinnati, OH



U. S. Wheat & Barley Scab Initiative (USWBSI)

Networking & Facilitation Office (NFO) | nfo@scabusa.org
495 Borlaug Hall | 1991 Upper Buford Circle | St. Paul, MN 55108 | scabusa.org | 517.290.5023

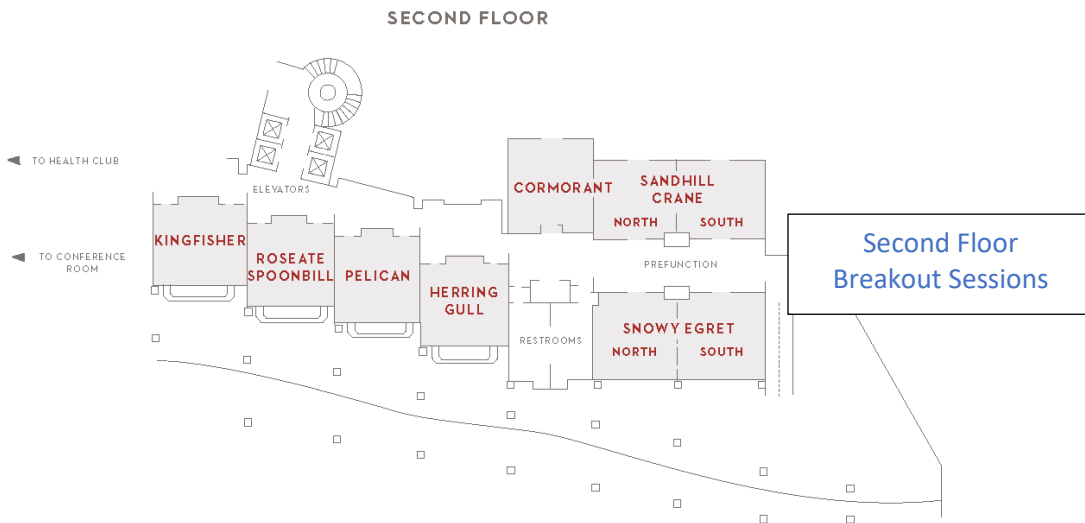
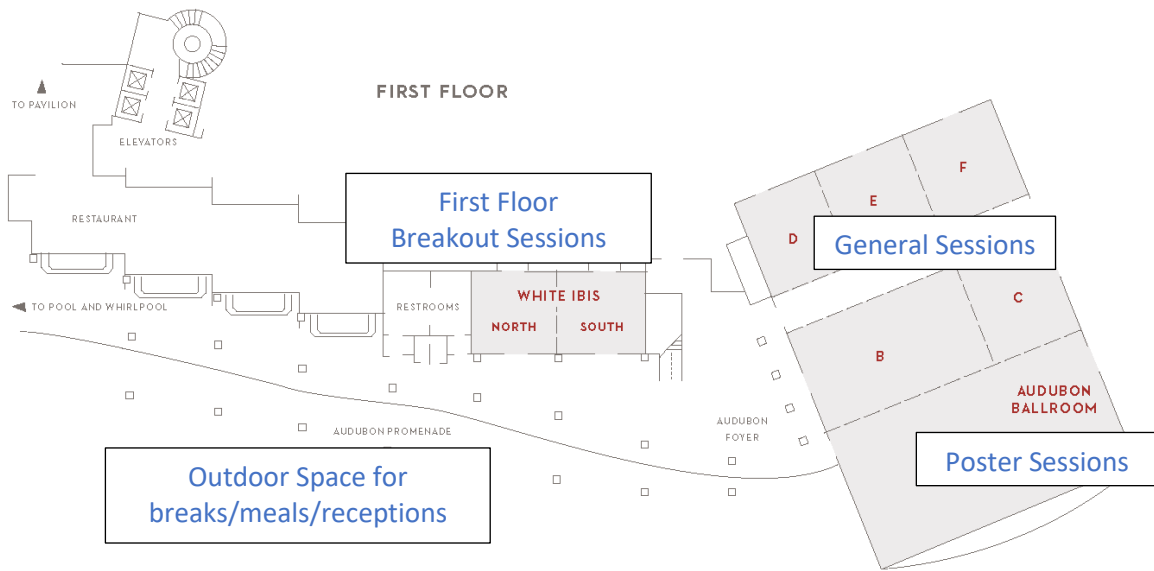
The USWBSI is a national multi-disciplinary and multi-institutional research consortium whose goal is to develop effective control measures that minimize the threat of Fusarium Head Blight (scab), including the production of mycotoxins, for producers, processors and consumers of wheat and barley. The USWBSI's more than \$8.5 million annual budget comes from Federal funds appropriated through the USDA-ARS and is distributed to research projects in more than 30 states.

2022 National FHB Forum Schedule at a Glance

	Sunday December 4, 2022	Monday December 5, 2022	Tuesday December 6, 2022
7:00AM		Breakfast Audubon Foyer	Breakfast Audubon Foyer
8:30AM		Breakout Meetings (See details on pg 7)	General Session 5 Audubon Ballroom B-F
9:00AM	Registration Opens Tower Pool Windows		
11:30AM	Poster Author Set-up Audubon Ballroom A	Breakout Meetings (See details on pg 7)	General Session 6 Audubon Ballroom B-F
1:00PM	Opening Session Audubon Ballroom B-F	Attendee Lunch	Closing Session NFHB Forum Adjourns @ Noon
1:45PM	General Session 1 Audubon Ballroom B-F	Breakout Meetings (See details on pg 8)	USWBSI Steering Committee Meeting Snowy Egret Room
	Break	Break	
	General Session 2 Audubon Ballroom B-F	General Session 3 Audubon Ballroom B-F	
	Flash & Dash	Flash & Dash	
5:30PM	Poster Session/Reception Audubon Ballroom A	General Session 4 Audubon Ballroom B-F	National Wheat Improvement Committee Meeting Sandhill Crane (continues Wed)
6:30PM	Dinner Audubon Ballroom B-F	Flash & Dash	
8:00PM	UG99 Workshop Snowy Egret	Poster Session Audubon Ballroom A Reception Audubon Promenade	
8:30PM	Early Career Social 1823 Kitchen & Bar	Women in USWBSI Social 1823 Kitchen & Bar	

Forum Facilities – Grand Hyatt Tampa Bay

FLOOR PLANS



2022 NFHB Forum Program

Sunday, December 4

9:00AM-5:30PM

Registration Open
Tower Pool Windows

11:30AM-12:30PM

Poster Author Set-up
Audubon Ballroom A

1:00PM

Opening Session
Audubon Ballroom B-F

1:00PM



Welcome & NFHB Forum Overview
Ruth Dill-Macky, University of Minnesota
USWBSI Co-Chair

1:05PM



Keynote Presentation
Edward Souza, BASF Ag Products
Feeding the 10 Billion: Thinking through the Journey

1:40PM



USWBSI Retrospective 25
Mike Davis, Birchwood Farms
The Story Behind the U.S. Wheat & Barley Scab Initiative Establishment in FY1998 and Its Evolution to What It Is Today

2:05PM

General Session 1
Audubon Ballroom B-F | Moderators: Carl Schwinke & Alyssa Collins, FOC Co-Chairs

2:10PM



Grower Perspective
Debra Seymour, Miles Farms, KY
A Trip Across the Pond and a Few New Friends

2:40PM



GDER
Thomas Miedaner, University of Hohenheim, Germany
Complex Interactions between FHB Resistance, Plant Height, and Anther Retention in Wheat Analyzed by Genomic-estimated Breeding Values

3:15PM

Networking Break
Audubon Ballroom Foyer

Abstract Viewing

Abstracts for all of the presentations and posters are available on the NFHB Forum Abstract Viewing page at <https://scabusa.org/scripts/forum/abstracts.php?fy=2022>



For quick mobile access to all the abstracts try this Online Abstract QR code

Sunday, December 4 (continued)

3:35PM

General Session 2

Audubon Ballroom B-F | Moderators: Ce Yang & Alyssa Koehler, FOC MGMT Representatives

3:40PM



MGMT

Kelsey Andersen Onofre, Kansas State University

MGMT Coordinated Project Overview and Kansas Perspective

4:15PM



PGB

David Haak, Virginia Polytechnic Institute and State University

Metagenomic and Amplicon Investigations of FHB and Microbial Interactions in Mature Wheat Heads

4:35PM

Flash & Dash Session

Audubon Ballroom B-F | Moderators: Ce Yang & Alyssa Koehler, FOC MGMT Representatives

Brief poster presentation highlights by selected graduate students and post-docs.

4:40PM Poster #109

Anusha Dahal, Kansas State University | Is Kernza® Susceptible to Fusarium Head Blight?

4:45PM Poster #120

Xiaoxi Qi, North Dakota State University | Impact of Hop Essential Oil-in-Water Nanoemulsion Treatment to Control the Safety of Malting Barley Using Naturally Fusarium Head Blight (FHB)-infected Barley Grains

4:50PM Poster #130

Binod Gyawali, Purdue University | Application of dsRNA Coated with Graphene Quantum Dots Offers a Promising Strategy for Silencing Fungi and Plants Genes

4:55PM Poster #148

Yishan Zhang, University of British Columbia | Decoding Adaptive Traits in *Fusarium graminearum* Using Integrated Omics

5:00PM Poster #154

Jonathan Concepcion, Michigan State University | High-Throughput Deoxynivalenol Concentration Detection and Prediction in Fusarium-Damaged Wheat Kernels using Handheld Hyperspectral Imaging Platform

5:15PM

Poster Session & Reception

Audubon Ballroom A

5:30-6:15PM

Even Numbered Posters

Authors Present to Answer Questions

Special Thanks to our Sponsors for the Reception Beer Donations



6:30-8:00PM

National FHB Forum Dinner & Special Recognitions

Audubon Ballroom B-F | Moderators: Rich Horsley and Dave Van Sanford

6:30PM Dinner Service

7:30PM Special Recognitions for

Mike Davis, retired from AMBA

Sue Canty, retired from USWBSI NFO

Special Thanks to our Dinner Sponsor



8:00-10:00PM

UG99 Workshop

Snowy Egret Room | Moderator: Bob Bowden, USDA-ARS

Join this session to hear updates on UG99 stem rust breeding in wheat and barley.

8:15-9:15PM

Early Career Social

1823 Kitchen & Bar | Moderators: Peter Oppenheimer and Lovepreet Singh

Informal opportunity for graduate students and post-docs to network and meet with their peers.

Monday, December 5

7:00-9:00AM

Breakfast

Audubon Ballroom Foyer | Breakfast available for attendees, seating available in Audubon Promenade

8:00AM-5:30PM

Registration Open

Audubon Ballroom Foyer

8:00AM-5:00PM

Poster Room Open for Viewing

Audubon Ballroom A

8:00AM-5:30PM

Open Meeting Room for Onsite Meetings

Sign-up for Times at Registration Desk

8:30AM-1:30PM

USWBSI Breakout Sessions

All attendees are welcome to attend.

Research Area Acronyms

FST - Food Safety & Toxicology
 GDER - Gene Discovery and Engineering Resistance
 MGMT - FHB Management
 PBG - Pathogen Biology and Genetics
 VDHR - Variety Development and Host Resistance

	White Ibis Room (First Floor)	Sandhill Crane Room (Second Floor)	Cormorant Room (Second Floor)	Pelican Room (Second Floor)	Roseate Spoonbill Room (Second Floor)	Snowy Egret Room (Second Floor)	Kingfisher Room (Second Floor)
MONDAY							
8:30AM			8:30-10:00AM FST Breakout Chair: Dave Kendra	8:30-10:00AM GDER Breakout Chair: Jyoti Shah	8:30-10:00AM PBG Breakout Chair: Martha Vaughn	8:30-10:00AM FHB MGMT Breakout Chair: Kaitlyn Bissonnette	
9:00AM	9:00-10:00AM USWBSI T3 Breeders DB Workshop Facilitator: David Waring	Open Meeting Space					Open Meeting Space
10:00AM	Break Service Location: Audubon Foyer						
10:15AM	10:15-11:45AM IM-CP Breakout Chair: Pierce Paul	10:15-11:45AM BAR-CP Breakout Chair: Tom Baldwin	10:15-11:45AM HWW-CP Breakout Chair: Sunish Sehgal	10:15-11:45AM DUR-CP Breakout Chair: Andrew Friskop	10:15-11:45AM VDHR-SPR CP Breakout Chair: Andrew Green	10:15-11:45AM VDHR-SWW CP Breakout Chair: Stephen Harrison	10:15-11:45AM VDHR-NWW CP Breakout Chair: Clay Sneller

Monday, December 5 (continued)

MONDAY	White Ibis Room (First Floor)	Sandhill Crane Room (Second Floor)	Cormorant Room (Second Floor)	Pelican Room (Second Floor)	Roseate Spoonbill Room (Second Floor)	Snowy Egret Room (Second Floor)	Kingfisher Room (Second Floor)
11:45AM	<p>Buffet Lunch for All Attendees Service Location: Audubon Foyer Seating: Audubon Promenade (outdoor), Poster Session Room, General Session Room or Breakout Rooms</p>						
12:30PM	<p>12:30-1:30PM Nuts & Bolts Session Moderator: Amber Hoffstetter <i>This breakout is targeted for Graduate Students, Post Docs and Technicians, but anyone interested is welcome to attend.</i></p>	<p>12:30-1:00PM VDHR-MGMT Joint Session Chairs: Kaitlyn Bissonnette & Andrew Green</p>				<p>12:30-1:00PM GDER & PBG Joint Session Chairs: Jyoti Shah & Martha Vaughn</p>	<p>Open Meeting Space</p>
		<p>1:00-1:30PM Genotyping Lab Breakout USDA Eastern Regional Small Grains Chair: G. Brown-Guedira Genotyping Lab w/ Researchers</p>	<p>1:00-1:30PM Genotyping Lab Breakout USDA Western-Pullman Chair: Deven See Genotyping Lab w/ Researchers</p>	<p>1:00-1:30PM Genotyping Lab Breakout USDA North Central Small Grains Chair: Jason Fiedler Genotyping Labs w/ Researchers</p>			
1:30PM	<p>Return to General Session, starts at 1:45PM</p>						

Monday, December 5 (continued)

1:45PM

General Session 3

Audubon Ballroom B-F | Moderators: Guihua Bia & Nidhi Rawat, FOC GDER Representatives

1:50PM



GDER

Matthew Helm, USDA-ARS

Engineering Gene-for-Gene Resistance to Fusarium Head Blight in Wheat and Barley

2:10PM



VDHR

Katherine Frels, University of Nebraska

Selecting for *Fusarium* Resistance in the Great Plains

2:30PM



MGMT

Darcy Telenko, Purdue University

Evaluation of Integrated Disease Management Options for Conventional and Organic Wheat Production in Indiana

2:50PM

Flash & Dash Session

Audubon Ballroom B-F | Moderators: Guihua Bia & Nidhi Rawat, FOC GDER Representatives

2:55PM Poster #113

Peter Oppenheimer, North Carolina State University | Biocontrol of FHB: Beyond the Greenhouse

3:00PM Poster #160

Caleb Hale, Montana State University | Fusarium Head Blight Resistant Durum Wheat in Montana, Development and Testing

3:05PM Poster #138

Shiv Singla, University of Nebraska-Lincoln | Constitutive Expression of *SbCCoAOMT* in the Phenylpropanoid Pathway Can Improve Resistance to Fusarium Head Blight of Wheat

3:10PM Poster #144

Imane Laraba, USDA-Agricultural Research Service | Insight into the Species and Mycotoxin Diversity within *Fusarium*

3:15PM Poster #164

Rae Page, University of Minnesota | A MAGIC Touch: Developing a Population to Enhance FHB Resistance in Barley

3:20PM

Networking Break

Audubon Ballroom Foyer

3:40PM

General Session 4

Audubon Ballroom B-F | Moderators: Peter Oppenheimer & Imane Laraba, FOC PBG Representatives

3:45PM



PBG

Ludovic Bonhomme, Université Clermont Auvergne, France

Searching for *F. graminearum* Effectors Controlling Fusarium Head Blight: A Core Arsenal Targeting Conserved Susceptibility Drivers in Bread Wheat?

4:20PM



VDHR

Vijay Tiwari, University of Maryland

Developing Genetic and Germplasm Resources to Enhance FHB Resistance Winter Wheat Cultivars

Monday, December 5 (continued)

4:40PM

Flash & Dash Session

Audubon Ballroom B-F | Moderators: Peter Oppenheimer & Imane Laraba, FOC PBG Representatives

4:45PM Poster #104

Wanderson Bucker Moraes, The Ohio State University | Post-anthesis Rainfall Effects on the Efficacy of Genetic Resistance and Fungicide Application against Fusarium Head Blight and Mycotoxins in Wheat

4:50PM Poster #136

Isha Mittal, University of North Texas | Targeting Susceptibility Genes in Wheat to Enhance Resistance Against Fusarium Head Blight

4:55PM Poster #126

Bhavit Chhabra, University of Maryland | Discovery of a Susceptibility Factor for Fusarium Head Blight on Chromosome 7A of Wheat

5:00PM Poster #140

Upasana Dhakal, Kansas State University | Genetic Basis of Variation in DMI Fungicide Sensitivity in US Fusarium graminearum Isolates

5:05PM Poster #163

Bipin Neupane, North Dakota State University | A Diallel Study to Detect Genetic Background Variation for FHB Resistance in Winter Wheat

5:15PM

Poster Session & Reception

Audubon Ballroom A

5:30-6:15PM

Odd Numbered Posters

Authors Present to Answer Questions

Special Thanks to our Sponsors for the Reception Beer Donations



Audubon Promenade

6:15-7:00PM

Reception continues with appetizers on the Promenade

8:00-9:30PM

Women in USWBSI Social

1823 Kitchen & Bar | Informal opportunity for women in USWBSI to network.

Tuesday, December 6

7:00-9:00AM

Breakfast

Audubon Ballroom Foyer | Breakfast available for Attendees, seating available in Audubon Promenade

8:00AM-10:00AM

Registration Open

Audubon Ballroom Foyer

8:15-8:45AM

Poster Authors Remove Posters

9:00AM

General Session 5

Audubon Ballroom B-F | Moderators: Nicholas Santantonio & Shengming Yang, FOC VDHR Representatives

9:05AM



VDHR

Rex Bernardo, University of Minnesota (Virtual)

Should Breeders Routinely Do Recurrent Selection during Cultivar Development?

Tuesday, December 6 (continued)

9:40AM



PBG

Martin Chilvers, Michigan State University

Fusarium Species Composition and Fungicide Sensitivity in Michigan

10:00AM



MGMT

Alyssa Koehler, University of Delaware (Virtual)

Coordinated Fungicide Sensitivity Project

10:20AM

Networking Break

Audubon Ballroom Foyer

10:45AM

General Session 6

Audubon Ballroom B-F | Moderators: Jiajia Rao & Xiang Yin, FOC FST Representatives

10:50AM



FST

Harmonie Bettenhausen, Hartwick College Center for Craft Food & Beverage

Control of *Fusarium* and Deoxynivalenol During Malting Using Peracetic Acid

11:25AM



GDER

Guixia Hao, USDA-ARS

Fungal Elicitor-triggered Immune Responses in Wheat and Barley

11:45AM

Closing Session

Audubon Ballroom B-F

11:45AM



USWBSI Recognitions & Closing Remarks

Richard Magnusson, Magnusson Farms

USWBSI Co-Chair

12:00PM

Meeting Adjourns

12:15-4:30PM

USWBSI Steering Committee Luncheon & Meeting (invitation only)

Snowy Egret Room

3:00-5:30PM (continues on Wednesday, December 7, 8:30AM-3:00PM)

National Wheat Improvement Committee (NWIC) Meeting

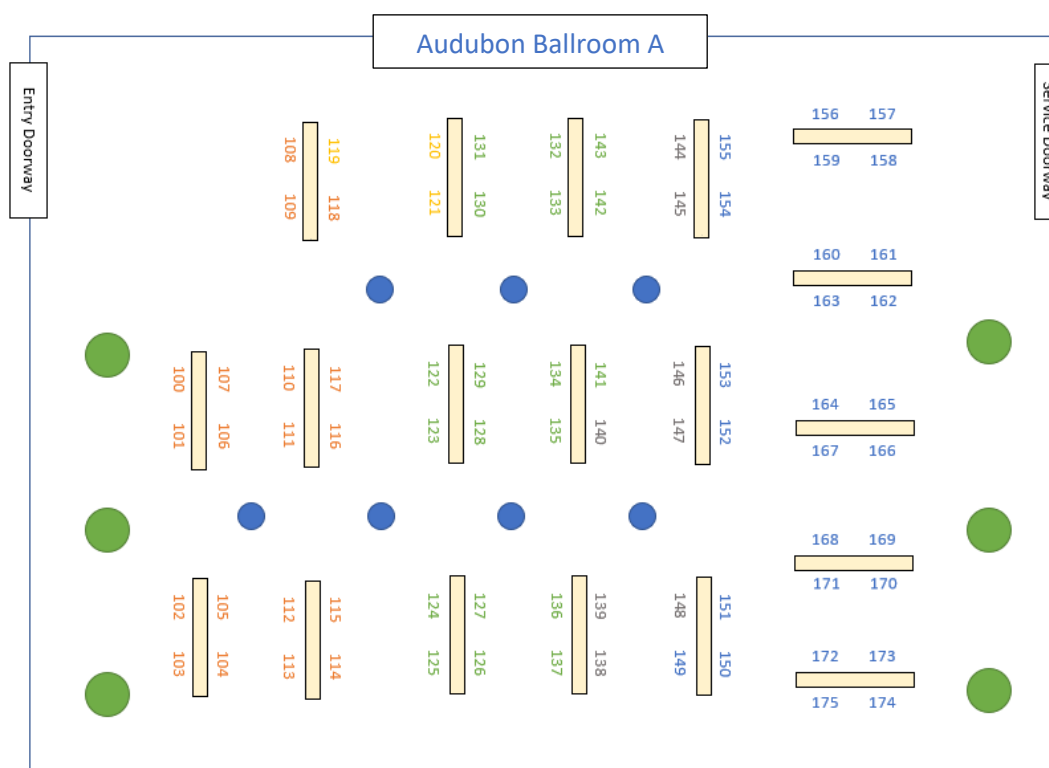
Sandhill Crane Room

4:30-5:00PM

USWBSI Executive Committee Meeting

Snowy Egret Room

Poster Sessions – Sunday and Monday



Authors Present to Answer Questions
Sunday, December 4
Poster Session
 5:30-6:15PM
Even Numbered Posters
Monday, December 5
Poster Session
 5:30-6:15PM
Odd Numbered Posters

Onsite Viewing

The Poster Room is open Sun-Mon during the Forum.

Virtual Viewing

The Virtual Poster Room is available in tandem with the live Poster Sessions.

<https://scabusa.org/scripts/VPosters/>



Special Thanks to the Poster Competition Sponsor:



Poster #	Category	Presenter Name	Institution	Title
100*	FHB Management	Asif, Mahnoor	University of Nebraska-Lincoln	Effects of Fungicides and Cultivar Resistance on Fusarium Head Blight of Wheat
101		Bowen, Kira	Auburn University	Fusarium Head Blight Management in Alabama: Observations from 2021 and 2022 Spring Seasons
102		Bucker Moraes, Wanderson	The Ohio State University	Fusarium Head Blight Management Coordinated Project: Integrated Management Trials 2022
103		Bucker Moraes, Wanderson	The Ohio State University	Fusarium Head Blight Management Coordinated Project: Uniform Fungicide Trials 2022
104		Bucker Moraes, Wanderson	The Ohio State University	Post-anthesis Rainfall Effects on the Efficacy of Genetic Resistance and Fungicide Application against Fusarium Head Blight and Mycotoxins in Wheat
105		Bucker Moraes, Wanderson	The Ohio State University	Rainfastness of Fungicides for Fusarium Head Blight and Deoxynivalenol Reduction in Soft Red Winter Wheat
106		Castelli Garnica, Vinicius	North Carolina State University	MSE FindR: a R Shiny App Tool for Recovering Variance in Designed Experiments Using Treatment Means and Post-Hoc Test Results
107		Cinderella, Joseph	University of Delaware	Baseline Sensitivities of <i>Fusarium</i> Species to Pydiflumetofen in East Coast Malting Barley
108		Da Silva, Camila	Purdue University	Management of Fusarium Head Blight in Organic Winter Wheat Production in Indiana
109		Dahal, Anusha	Kansas State University	Is Kernza® Susceptible to Fusarium Head Blight?

*Poster numbers start at 100

Poster #	Category	Presenter Name	Institution	Title
110	FHB Management	De Almeida, Juliano	Fundação Agrária de Pesquisa Agropecuária, Brazil	Genetic Strategy for Controlling Fusarium Head Blight Disease of Wheat and Associated Deoxynivalenol Contamination of Grain in Subtropical, Humid, Southern Brazil – Five Years Results
111		Lux, LeAnn	North Dakota State University	Summary of 2022 Uniform Fungicide Trials (UFT) in North Dakota
112		Mahecha, Esneider	South Dakota State University	Efficacy of Essential Oils in the Management of Fusarium Head Blight in Spring Wheat
113		Oppenheimer, Peter	North Carolina State University	Biocontrol of FHB: Beyond the Greenhouse
114		Vaughan, Martha	USDA-Agricultural Research Service	Implications of Elevated Carbon Dioxide on Wheat Type I Resistance against Fusarium Head Blight
115		Wang, Xiben	Agriculture and Agri-Food Canada	Response of Barley and Oat Genotypes to <i>Fusarium</i> Pathogens and Associated Mycotoxins
116		Yabwalo, Dalitso	South Dakota State University	Management of Fusarium Head Blight with Demethylation Inhibitors and Succinate Dehydrogenase Inhibitors Combinations Under High Disease Pressure in Spring Wheat
117		Yang, Ce	University of Minnesota	Development of an AI and Cloud Based Real-time Wheat FHB Detection Platform
118		Yimer, Belayneh	University of Idaho	Evaluation of Sphaerex for Control of Fusarium Head Blight and DON in Barley in Southeastern Idaho
119	Food Safety & Toxicology	Jin, Zhao	North Dakota State University	The Role of Fusarium Damaged Kernels in DON Accumulation during the Malting of FHB Infected Wheat
120		Qi, Xiaoxi	North Dakota State University	Impact of Hop Essential Oil-in-Water Nanoemulsion Treatment to Control the Safety of Malting Barley Using Naturally Fusarium Head Blight (FHB)-infected Barley Grains
121		Qi, Xiaoxi	North Dakota State University	Mechanisms of Antifungal and Mycotoxin Inhibitory Properties of Thyme Essential Oil and its Major Chemical Constituents in Emulsion-based Delivery System
122	Gene Discovery & Engineering Resistance	Alhashel, Abdullah	USDA-Agricultural Research Service	Host-induced Gene Silencing of the Fungal Gene <i>FgGCN5</i> in Barley for Improving Resistance to Fusarium Head Blight
123		Bethke, Gerit	University of Minnesota	Microscopy and RNA-Seq Analysis of Fusarium Head Blight Infection in a Barley Mutant Deficient in Deoxynivalenol Detoxification
124		Bethke, Gerit	University of Minnesota	The UDP-Glycosyltransferase UGT13248 is Required for Type 2 Resistance to Fusarium Head Blight in Barley
125		Chen, Hui	Kansas State University	Develop a Transgene-Free CRISPR/Cas Genome Editing System for Improvement of FHB Resistance in Wheat
126		Chhabra, Bhavit	University of Maryland	Discovery of a Susceptibility Factor for Fusarium Head Blight on Chromosome 7A of Wheat
127		Dineen, Alison	Rutgers, The State University of NJ	Genetic Engineering of Barley to Improve Fusarium Head Blight Resistance
128		Gao, Dongying	USDA-Agricultural Research Service	Preliminary Study on RNAi-Mediated Resistance to Fusarium Head Blight in Barley (<i>Hordeum vulgare</i>)

Poster #	Category	Presenter Name	Institution	Title	
129	Gene Discovery & Engineering Resistance	Gupta, Megha	University of Maryland	Wheat Pore-forming Toxin-like Protein Confers a Broad Spectrum Resistance against Multiple Fungal Pathogens in Arabidopsis	
130		Gyawali, Binod	Purdue University	Application of dsRNA Coated with Graphene Quantum Dots Offers a Promising Strategy for Silencing Fungi and Plants Genes	
131		Hay, William	USDA-Agricultural Research Service	<i>Fhb1</i> Disease Resistance QTL Does not Exacerbate Wheat Grain Protein Loss at Elevated CO ₂	
132		Li, Wanlong	South Dakota State University	Transfer <i>Fhb7</i> to Barley through CRISPR-mediated Targeted Gene Insertion	
133		McLaughlin, John	Rutgers, The State University of New Jersey	Measuring the Impact of Barley Apoplastic Exosomes on FHB	
134		McLaughlin, John	Rutgers, The State University of New Jersey	Trichothecenes Impact Chloroplast Protein Homeostasis and Stress Responses	
135		Mittal, Isha	University of North Texas	Spherical Nucleic Acids for <i>Fusarium graminearum</i> Gene Regulation	
136		Mittal, Isha	University of North Texas	Targeting Susceptibility Genes in Wheat to Enhance Resistance Against Fusarium Head Blight	
137		Poudel, Bikash	USDA-Agricultural Research Service	A Wheat Practical Haplotype Graph to Facilitate Low-Cost Genotyping for FHB Resistance Mapping	
138		Singla, Shiv	University of Nebraska-Lincoln	Constitutive Expression of <i>SbCCoAOMT</i> in the Phenylpropanoid Pathway Can Improve Resistance to Fusarium Head Blight of Wheat	
139		Zhong, Shaobin	North Dakota State University	Editing Wheat Genome through Wide Hybridization with Maize Expressing Cas9 and Guide RNA	
140		Pathogen Biology & Genetics	Dhakal, Upasana	Kansas State University	Genetic Basis of Variation in DMI Fungicide Sensitivity in U.S. <i>Fusarium graminearum</i> Isolates
141			Hao, Guixia	USDA-Agricultural Research Service	Development of an Endophytic Fungal RNAi Delivery Platform to Control Fusarium Head Blight and Mycotoxin Contamination
142	Kim, Hye-Seon		USDA-Agricultural Research Service	Genome-wide Identification of Fusarium Effectors and 3D Protein Structure Prediction with AlphaFold Analysis	
143	Krone, Mara		University of Illinois	Selection Due to Host Resistance in <i>Fusarium graminearum</i>	
144	Laraba, Imane		USDA-Agricultural Research Service	Insight Into the Species and Mycotoxin Diversity within <i>Fusarium</i>	
145	Proctor, Robert		USDA ARS	Effect of Pigmentation on Structure and Function of Perithecia Produced by <i>Fusarium graminearum</i>	
146	Vaughan, Martha		USDA-Agricultural Research Service	Impact of Elevated Carbon Dioxide on <i>Fusarium graminearum</i> Mycotoxin Production	
147	Whitaker, Briana		USDA-Agricultural Research Service	Bacterial Endophyte Biocontrols Indirectly Impact Fusarium Head Blight Disease in Wheat	
148	Zhang, Yishan		University of British Columbia	Decoding Adaptive Traits in <i>Fusarium graminearum</i> Using Integrated Omics	
Virtual	Trail, Frances		Michigan State University	Biofilms Have Roles in FHB Disease	

Poster #	Category	Presenter Name	Institution	Title
149	Variety Development and Host Resistance	Abdalla, Ahmed	South Dakota State University	FHB Stage Detection, Deep Scanning Robot
150		Abdullah, Sidrat	USDA-ARS	Assay Validation Through Dip Inoculation of Fusarium Head Blight in Spring Barley Training Population
151		Azad, Babak	South Dakota State University	Large-scale Wheat-FHB Disease Analysis with Deep Neural Networks
152		Benz, Brooke	North Dakota State University	Genotype and Fusarium Head Blight Selection for Microbiomes Across Barley Spikes
153		Cai, Xiwen	USDA-Agricultural Research Service	Molecular Marker-Assisted <i>Fhb7</i> Introgression in Common and Durum Wheat
154		Concepcion, Jonathan	Michigan State University	High-Throughput Deoxynivalenol Concentration Detection and Prediction in Fusarium-Damaged Wheat Kernels using Handheld Hyperspectral Imaging Platform
155		Dangi, Bhanu	North Dakota State University	Diversification of FHB Resistance QTL in Winter Wheat Germplasm
156		Fathima, Tasneem	South Dakota State University	Screening for FHB-Resistance in Barley in South Dakota
157		Gill, Harsimardeep	South Dakota State University	Genomic Prediction to Improve FHB Resistance in Winter Wheat
158		Gyawali, Binod	Purdue University	Releasing Lines Pyramided with <i>Fhb1</i> and <i>Fhb7</i>
159		Halder, Jyotirmoy	South Dakota State University	Artificial Intelligence-based Detection and Sorting of Fusarium Damaged Kernels in Wheat and Implications for FHB Resistance Breeding
160		Hale, Caleb	Montana State University	Fusarium Head Blight Resistant Durum Wheat in Montana, Development and Testing
161		M Nafchi, Ali	South Dakota State University	Improving Wheat Breeding Process Efficiency, Utilizing AI and Deep Scanning Model
162		Mohammadi, Mohsen	Purdue University	NorGrains and BIG6 Genomic Selection Pipeline at Purdue
163		Neupane, Bipin	North Dakota State University	A Diallel Study to Detect Genetic Background Variation for FHB Resistance in Winter Wheat
164		Page, Rae	University of Minnesota	A MAGIC touch: Developing a Population to Enhance FHB Resistance in Barley
165		Saini, Dinesh Kumar	South Dakota State University	Prediction of DON Content in Wheat Flour Using Close-Range Hyperspectral Imaging Coupled with Machine and Deep Learning Approaches
166		Steigenga, Niels	Purdue University	Genomic Selection: Marker Set Optimization Improves Prediction Accuracy
167		Stockinger, Eric J.	The Ohio State University	DON and FHB Resistance in North American Winter Barleys
168		Thapa, Subash	South Dakota State University	Estimating FHB Infection Level in Winter Wheat Spikes Using High-Resolution Imaging and Deep Transfer Learning
169		Tidakbi, Lawrence	Kansas State University	Haplotype-Informed Prediction of Fusarium Head Blight Resistance in USA Wheat Breeding Programs
170		Turner, Kathryn	The Land Institute	Intermediate Wheatgrass Chromosomal Regions Associated with Disease Resistance
171		Wang, Runhao	North Dakota State University	Recurrent Selection for Fusarium Head Blight Resistance in a Durum Wheat Population
172	Winn, Zachary	North Carolina State University	Utilization of a Publicly Available Diversity Panel in Genomic Prediction of Fusarium Head Blight Resistance Traits in Wheat	
173	Xu, Steven	USDA-Agricultural Research Service	Identification and Mapping of Quantitative Trait Loci for Fusarium Head Blight Resistance in Synthetic Hexaploid and Spring Wheat	



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