FUSARIUM FOCUS

A Highly Efficient Molecular Tool for FHB Chemotype Surveys

LOVEPREET SINGH / Department of Plant Pathology, *University of Minnesota*
and MITCH ELMORE / *USDA-ARS Cereal Disease Laboratory, St. Paul, MN*

Elmore lab introduces the first single test capable of distinguishing all four major toxin-producing types of *Fusarium graminearum* to support better management decisions and help ensure the safety and marketability of U.S. cereals.

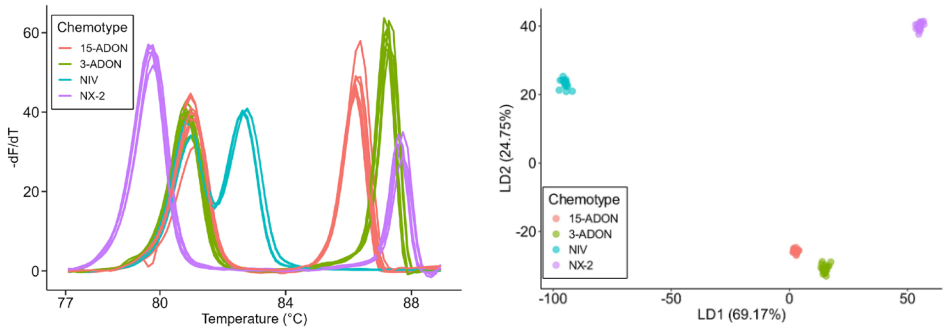
Deoxynivalenol (DON), also known as vomitoxin, remains the primary mycotoxin of concern for wheat and barley growers and the grain industry. Because of its impact on food and feed safety, the U.S. Food and Drug Administration (FDA) has established strict limits for DON in finished grain products, making it one of the main targets for routine testing and discounts at grain elevators in the United States. However, not all strains of the major FHB pathogen, *Fusarium graminearum*, produce the same toxins. The pathogen exists in different groups, called chemotypes, which produce different DON-related toxins, including 3-acetyl deoxynivalenol (3ADON), 15-acetyl deoxynivalenol (15ADON), nivalenol (NIV), and NX-2. In infected cereals, 3ADON and 15ADON are converted into DON. While DON and NX-2 have similar toxicity, NIV is generally considered more toxic.

In the United States, grain testing programs have focused historically on DON because 15ADON-producing populations have been the most common in major wheat-growing regions. However, this situation is changing. Over the past two decades, significant shifts in chemotype distribution have been reported across North America. In Western Canada and the Upper Midwest, 3ADON populations have increasingly replaced 15ADON populations. At the same time, NIV-producing strains, once rare in the U.S., have been reported in southern states such as Louisiana and are now being detected farther north, including in Georgia and Illinois. In addition, the relatively recent identification of the NX-2 chemotype in the Upper Midwest has now been found in multiple regions, including New York and parts of Canada. As these changes continue, there is a growing need for regular field surveys to track which toxin-producing populations are present, so that monitoring and management strategies can keep pace with evolving risks. However, the genetic testing required to identify chemotypes from hundreds of samples from field surveys has remained inefficient. To address this issue, **Mitch Elmore**'s group at the USDA-ARS Cereal Disease Laboratory located in St. Paul, Minnesota developed a high throughput, multiplex, and cost-effective molecular genotyping assay to detect all four chemotypes in a single tube reaction. High-resolution melting (HRM) analysis chemistry, which detects small differences in DNA sequence based on how it melts when heated, was used to develop the assay. The multiplex HRM assays were created by analyzing sequence variation from more than 300 isolates and targeting functional regions of three trichothecene biosynthetic genes (*TRI1*, *TRI8*, and *TRI13*) which are primarily responsible for toxin variation. The assay successfully differentiated chemotypes by producing unique chemotype specific melting profiles. Additionally, Elmore's lab developed a machine learning-based, automated data analysis pipeline for chemotype assignment.

Chemotype Surveys, continued on page 2

PHOTO: JEFF THOMPSON, UNIVERSITY OF MINNESOTA

Lovepreet Singh, University of Minnesota, works to develop a high-resolution melting assay for chemotyping Fusarium graminearum *isolates.*



Multiplex HRM differentiates Fusarium graminearum *chemotypes: a) Chemotype specific derivative melt plot profile. b) Linear discriminant analysis (LDA) plot of derivative melt data generated from the 80* Fusarium *isolates showing unique cluster for each chemotype.*

FUSARIUM FOCUS

Fusarium Focus is an online newsletter published periodically by the U.S. Wheat & Barley Scab Initiative (USWBSI) and distributed to the USWBSI community.

Content Creation: Amber Hoffstetter
Design: Dawn Mathers

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 annual budget comes from Federal funds appropriated through the USDA-ARS and is distributed to more than 120 research projects in 31 states.

U.S. Wheat & Barley Scab Initiative (USWBSI)
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Chemotype Surveys, continued from page 1

This new assay offers several practical advantages. It can detect all four chemotypes at once in a single reaction, delivers results in less than two hours, and does not require expensive fluorescent probes used in quantitative PCR assays.

This new assay offers several practical advantages. It can detect all four chemotypes at once in a single reaction, delivers results in less than two hours, and does not require expensive fluorescent probes used in quantitative PCR assays. The test is highly accurate, with over 99% prediction success rate, and is sensitive enough to detect very small amounts of fungal DNA. In addition, the data can be analyzed using freely available software, making it accessible for broader use.

This is the first single test capable of distinguishing all four major toxin-producing types of *Fusarium graminearum*. As FHB populations continue to evolve, tools like this will make it easier to conduct large-scale surveys and monitor emerging risks. This information can help determine whether testing programs should expand beyond DON to include other toxins such as NIV or NX-2. Ultimately, this assay improves the ability to track FHB pathogens and related toxins in order to support better management decisions and help ensure the safety and marketability of U.S. cereals.

For detailed information on the multiplex HRM genotyping assay refer to the research article published in the journal *Scientific Reports* (https://doi.org/10.1038/s41598-024-81131-5). ●

STEERING COMMITTEE

USWBSI Welcomes Two New Members as a Result of Updates to the Policies and Procedures

Mitch Konen

Christina Hagerty

The USWBSI Steering Committee (SC) met on December 9, 2025 and voted on updates to the Policies and Procedures. Included in these changes were modifications to the Steering Committee representation. With the Minnesota Barley Growers Association dissolving in 2025, and **Marvin Zutz** concluding his service on the SC, a new barley organization representative was needed. The SC voted to invite the National Barley Growers Association (NBGA) to hold a standing representative position. The NBGA accepted the invitation and recently appointed **Mitch Konen** as their SC representative. Konen is the president of NBGA and a third-generation farmer from north central Montana. He has a bachelor of science in agricultural business and economics from Montana State University. He has farmed with his father for most of his life and partnered with him up until his retirement. Located in Teton County, just off the east slopes of the Rocky Mountains, his family farms on a Federal Irrigation Project named Greenfields Irrigation District where they raise malt barley, wheat, canola, and hay. They also farm dryland acreage in northwest Cascade County where they grow winter wheat. They own and lease land. Him and his wife, Susie, have three grown children and five grandchildren. Their second son works the farm with them, while the oldest son helps when he's able. Konen has advocated for farm policy as a member of the Montana Grain Growers Association, where he has served as a board member and progressed through the chairs as an officer. He has also served as

Steering Committee, continued on page 3

Steering Committee, continued from page 2

a board member of the National Association of Wheat Growers and is also a member of the Barley Improvement Committee and the National Barley Improvement Committee in a joint effort with the American Malting Barley Association.

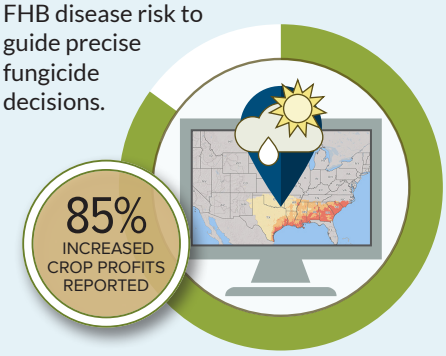
The SC also approved formalizing a stronger connection with the National Wheat Improvement Committee (NWIC) by adding an NWIC position on the SC. NWIC reciprocated, with the USWBSI now also holding a formal position on the NWIC. The representative on the USWBSI SC will be the Chair of the National Wheat Improvement Committee. **Christinia Hagerty**, Oregon State University, is currently serving as Chair of the NWIC and a member of the USWBSI SC. Hagerty is a 5th generation Oregonian and grew up on a grass seed farm in Willamette Valley. Her family's covered wagon from the Oregon Trail is located in the Brownsville Museum. She earned her bachelor of science degree in environmental science at Santa Clara University, her master of science degree in plant breeding at Oregon State University, and her doctorate degree in plant pathology also at Oregon State University. Hagerty is an associate professor of plant pathology at Oregon State University's Columbia Basin Agricultural Research Center and the Oregon Wheat Faculty Scholar. She is the first female to serve as Chair of the NWIC.

The USWBSI would like to welcome these two new members to the SC and looks forward to working with them in the future. In addition, the Initiative would like to once again thank Marvin Zutz for his dedicated years of service and impressive advocacy of the USWBSI during his tenure. ●

DID YOU KNOW...

FHB RISK TOOL OPEN FOR GROWING SEASON

Check out USWBSI's real-time FHB Risk Tool using weather modeling to forecast FHB disease risk to guide precise fungicide decisions.



USWBSI Steering Committee Approves FY26 Funding Recommendations

The U.S. Wheat & Barley Scab Initiative (USWBSI) Fiscal Year 2026 funding cycle required extraordinary coordination and patience. Stemming from a new USDA review process for the Request for Pre-Proposals (RFP), significant delays were experienced this year in the initial submission timing. The USWBSI community demonstrated remarkable agility. Principal Investigators (PIs) and review panels pivoted quickly, adopting a highly responsive approach to meet condensed timelines. Thanks to this collective effort, the Steering Committee (SC) officially approved the FY26 Funding Recommendations in March and all recommended PIs successfully submitted their applications in April, and they will be provided to the USDA for final review and processing in May.

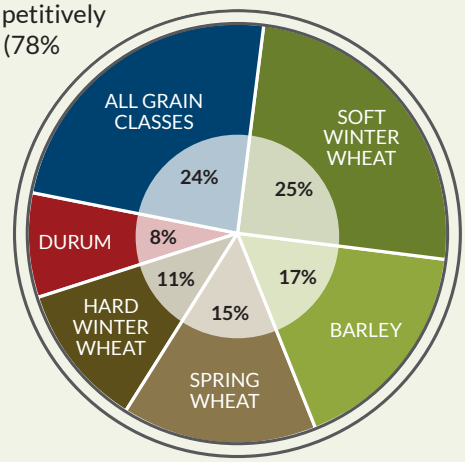
Navigating a Competitive Funding Landscape

The reviews for this new funding cycle were particularly rigorous as the Initiative received $11.3 million in total funding requests, an increase of $1 million in requests compared to the last funding cycle that started in FY22. USWBSI recommendations were limited to fit within the USDA FY26 USWBSI budget apportionment of $8.1 million (up $500K from FY25). **Andrew Friskop**, researcher co-chair representing the Executive Committee (EC), noted that the high quality of the pre-proposal pool required difficult decisions, including significant modifications and eliminations, to align with the available budget.

Prioritizing Strategically

The approved recommendation portfolio represents a healthy mix of institutional stability and new perspectives:

- 107 pre-proposals selected competitively were recommended for funding (78% of submissions)
- 19% of the recommendations are for first-time projects, while 81% support ongoing research
- 89 unique PIs are recommended across 31 states, this includes 75 PIs from land-grant universities and 14 from the USDA-ARS, with a total of 31 institutions involved
- Notably, the FY26 funding cycle welcomes 15 new PIs to the Initiative, some due to PI transitions



The FY26 recommendations cover the full spectrum of wheat and barley research

Once agreements are fully executed the USWBSI Networking & Facilitation Office (NFO) will publish all the FY26 funded project abstracts in the USWBSI projects database, expected to be available sometime in late July or early August. Special thanks for the impressive work of all the review panels for their careful and comprehensive review of all the pre-proposals to ensure alignment with USWBSI's action plan. ●

MARK YOUR CALENDARS

2026 National Fusarium Head Blight Forum—Louisville, Kentucky

The 2026 National Fusarium Head Blight Forum will be held December 7-9, 2026, in Louisville, Kentucky at the Hyatt Regency Louisville. Located in the heart of downtown Louisville, this year's location is withing walking distance to all the top area attractions. **New this year the NFHB Forum is testing a shift forward one day to a Monday-Wednesday offering.** Mark your calendars and make plans to start cultivating FHB research solutions in the Derby City at the 2026 NFHB Forum! Hotel reservations can now be booked at prevailing per-diem rates. Stay tuned for updates on the 2026 National FHB Forum website, and watch your email for more information as it becomes available.

BUILDING ON SUCCESS

Nominations Open May 20 for the 2026 USWBSI Excellence Awards

Following a successful inaugural year, the USWBSI Executive Committee is pleased to announce the second annual Call for Nominations for the USWBSI Excellence Awards.

These awards continue our new tradition of honoring the scientists, advocates, and teams whose dedication is vital to reducing the impact of Fusarium Head Blight (FHB). As we enter the second year of this program, we invite you to help us highlight the ongoing innovation and collaboration within our community.

Award Categories

- **Outstanding New Investigator**: For researchers with up to 7 years as a USWBSI-funded PI whose work shows high potential.
- **Collaborative Achievement**: For multi-institutional or multi-disciplinary teams driving meaningful progress.
- **Innovative Impact**: For individuals or groups whose outreach or advocacy have moved the needle on FHB awareness.
- **Lifetime Achievement**: Reserved for those with 20+ years of impactful FHB research and leadership.

Awards Ceremony in Louisville

Winners will be honored during the 2026 National FHB Forum, on Monday evening this year at the Hyatt Regency Louisville in Louisville, KY, December 7, 2026. Recipients of the Lifetime Achievement and Outstanding New Investigator awards will once again have the opportunity to present their work as featured speakers during the NFHB Forum program.

Nominations Open in May, Due in August

Online nominations must be submitted through the online USWBSI Excellence Awards Form, which will open on May 20. For full criteria and requirements visit the USWBSI Excellence Awards webpage. For your reference, a listing of the 2025 Excellence Awardees is also available.

Who Has Inspired You?

Nominate a colleague this year and help us continue to recognize excellence in the FHB community!

NOMINATION DEADLINE
August 26, 2026

ELIGIBILITY
Visit scabusa.org/excellence_awards for full details

QUESTIONS
Email the USWBSI NFO at nfo@scabusa.org

New USWBSI Advocacy Factsheet Highlights Key Outcomes

USWBSI has developed a new factsheet for 2026 that provides an overview of the targeted strategies of the Initiative and highlights recent outcomes based on data from FY24-25. Posted March 3, 2026, this new document shows the continued threat of FHB with yield loss from FHB at $30.8 million in 2024 and the practical need for continued USWBSI research. As pictured in the key outcomes, through the research of PIs within the USWBSI, 33 new varieties were released in FY24 alone with 81% classified as moderately resistant to FHB. Over 100,000 samples were processed and genotyped for genomic selection at four national genotyping laboratories. More than twenty states participated in the integrated management trials to provide evaluation of new fungicide chemistries and application technologies. Eighty-five percent of the FHB Risk Tool users indicate increased crop profits by monitoring to make precise fungicide application decisions.

Put These Results into Action

This factsheet is a powerful tool to demonstrate the real-world value of the USWBSI's research. Download the 2026 USWBSI Factsheet and share it with your state legislators and industry stakeholders to show how targeted USWBSI strategies are protecting our wheat and barley crops and supporting the agricultural economy. ●

2026 Field Days

DATE	EVENT	TIME	LOCATION	ADDITIONAL INFORMATION
May 6, 2026	Grow Pro Genetics 2026 Wheat Field Day Kinston, North Carolina	9:30 am EDT	Location 35.268285, -77.7056 FIELD ENTRANCE: 2927 Eason Rd. La Grange, NC 28551	Register
May 12, 2026	University of Kentucky Wheat Field Day	9:00 am CDT	Research and Extension Center, 300 Extension Farm Rd., Princeton, Kentucky	Register
May 20, 2026	Virginia Small Grains Field Day	8:00 am – 12:00 pm EDT	Eastern Virginia AREC, 229 Menokin Rd., Warsaw, VA 22572	More information coming soon.
June 2026 (Date TBD)	University of Illinois, Small Grains Field Day	8:30 am – 2:00 pm CDT	Agronomy Seed House, 1418 Hazelwood Dr., Urbana IL 61802	Watch for more details and date to be released.
June 8, 2026	Grow Pro Genetics 2026 Wheat Field Day, Rockford, Ohio	9:30 am EDT	Location 40.728, -84.6037; FIELD ENTRANCE: 11255 County Line Rd., Rockford, Ohio 45882	Register
June 10-12, & 16, 2026	Colorado State University's Crop Testing Program 2026 Wheat Field Days	*(All times MDT)* June 10 • 8:15 am, Akron; 3 pm, Yuma June 11 • 9 am, Walsh; 3 pm, Brandon June 12 • 8 am, Burlington; 11:30 am, Genoa; 4 pm, Roggen June 16 • 8 am, Julesburg; 4 pm, Orchard		https://csucrops.org/wfd/
June 16, 2026	Michigan Wheat Program's Annual Summer Field Day		Frankenmuth	For more information visit https://miwheat.org/
June 17, 2026	The Ohio State University 2026 Small Grains Field Day	8:30 am EDT	Western Agricultural Research Station, 7721 S. Charleston Pike, South Charleston, Ohio, 45368	Register
July 2, 2026	2026 Cornell Seed Grower's Field Day	9:00 am EDT	NYSIP Foundation Seed Barn, 791 Drygen Rd. Rt. 366, Ithaca, NY	For more information check out the website. ●

Highly Productive: NWIC Fly-In 2026 Recap

CHRISTINA HAGERTY / *National Wheat Improvement Committee Chair*

The 2026 National Wheat Improvement Committee (NWIC) Washington, D.C. fly-in on March 17-18, 2026, was highly productive and successful. Wheat growers, breeders, and researchers met with Congressional offices, USDA-ARS, and the White House to emphasize the importance of sustained federal investment in wheat research.

Across meetings, NWIC highlighted the increasing challenges facing U.S. wheat producers, including evolving disease pressure, emerging pest threats, rising input costs, and global competition. Delegates reinforced that federal research investments provide strong economic returns and help maintain U.S. leadership in global wheat production.

Importantly, NWIC communicated that we understand the current fiscal climate and do not seek to "rob Peter to pay Paul." Rather, modest strategic investments help protect prior federal investments and ensure research programs remain responsive to emerging threats.

The NWIC fly in was organized by our secretariat, National Association of Wheat Growers (NAWG). We are very appreciative of their support and the specific effort from the NAWG Vice President of Policy and Communications, **Anthony Peña** and NAWG CEO, **Sam Keifer**. Despite losing a few participants at the last minute due to severe weather and flight cancellations, Peña did an exceptional job managing rapid adjustments and seamlessly reorganizing the schedule on the fly to ensure all meetings remained productive and well-coordinated.

Participation

NWIC was represented by 9 wheat researchers from major land-grant universities and a strong grower delegation representing key wheat-producing regions. Grower participation included 15 growers from nine states including: Oklahoma, Montana, Washington, Minnesota, Oregon, California, Idaho, North Dakota, and Texas. Grower perspectives were instrumental in communicating the real-world importance of research investments for maintaining productivity, managing disease risk, and sustaining rural economies.

A total of 25 meetings were conducted, including visits to 13 Senate offices, eight House offices, one White House meeting, one USDA-ARS meeting, and two meetings with Appropriations Committee staffers. Meetings included key appropriators and members representing major wheat-producing states.

2026 Legislative Priorities

NWIC communicated unified support for three core wheat research programs:

- **Wheat Resiliency Initiative (WRI)**
  Increase funding from $1.5M to $2.25M capacity to address emerging threats including: Stripe rust, Bacterial leaf streak, Hessian fly, and Wheat stem sawfly.
- **U.S. Wheat and Barley Scab Initiative (USWBSI)**
  Sustain funding and work toward full funding of the $15M authorized level to combat Fusarium Head Blight and protect grain quality.
- **Small Grains Genomic Initiative (SGGI)**
  Maintain full funding at $3.44M to support advanced genomic tools that accelerate variety development and improve disease resistance.

Outcomes

1. The 2026 fly-in strengthened relationships with Congressional offices and federal agencies while reinforcing the national importance of agricultural research investment.
2. Unified messaging from growers and researchers demonstrated the strong partnership that underpins U.S. wheat innovation and supports long-term food security.
3. NWIC appreciates the continued engagement from policymakers and partners as we work to ensure a resilient and competitive future for U.S. wheat production.

Dr. Christina Hagerty (NWIC Chair) and Erin Heideman (Oregon Grower) outside the USDA-ARS building in Washington, DC.

The success of the 2026 NWIC fly-in was made possible through the strong partnership with NAWG, the support of state organizations that enabled grower participation, and the dedication of each attendee who took time away from their families, farms, laboratories, and professional responsibilities to advocate for the future of U.S. wheat research.

Interested in participating in the 2027 fly in? Contact NWIC Chair, Christina Hagerty: Christina.Hagerty@oregonstate.edu

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The National Association of Wheat Growers (NAWG) is the primary representative of U.S. wheat growers. NAWG and its 20 member-states work to coordinate and implement policy priorities in the following areas: farm policy, conservation, energy, research, trade (on Capitol Hill), biotechnology, and others. https://wheatworld.org/.

The National Wheat Improvement Committee (NWIC) is a non-profit organization composed of 24 voting members whose mission is to communicate, educate, and advocate on behalf of the scientific well-being of the U.S. wheat industry. NAWG is the Secretariat of the Committee, and the two organizations work together each year to outline and advocate research priorities. https://wheatworld.org/coalitions/.

National Barley Improvement Committee Advocates on the Hill for Critical Research Positions

ASHLEY MCFARLAND / *American Malting Barley Association, President and CEO*

The National Barley Improvement Committee, which represents the U.S. barley community of growers, researchers, processors, users, and allied industries, spent March 9-11 in Washington, D.C. advocating on behalf of federal research funding for the barley industry. Twenty-eight stakeholders visited over 90 offices delivering a unified message on the importance of federal barley research programs, strained by ongoing vacancies in critical research roles.

NBIC's top priority focused on addressing a dozen vacancies that are limiting capacity for research within the USDA Agricultural Research Service. Those roles directly support several research initiatives that round out the NBIC priorities, including the Resilient Barley Initiative (RBI), the Barley Pest Initiative (BPI), the U.S. Wheat and Barley Scab Initiative (USWBSI), and the Small Grains Genomic Initiative (SGGI). Each leverages federal funds to support work across multiple states within ARS research units and Land Grant universities. Additionally, researchers leverage investments from private industry made by the American Malting Barley Association and state check-off dollars to support these programs.

Stakeholders on the Hill also shared stories how funding delays, especially within the USWBSI, significantly hampered research efforts throughout the 2025 crop season. The late release of funds to researchers left trials stranded without support, and in some situations, research was temporarily abandoned. The NBIC is uniquely positioned to speak to the impacts of these disruptions; with researchers sharing their experiences; farmers speaking to what delays in genetic resistance means to their operations; and industry end-users expressing how important it is to have a reliable, consistent, and safe supply of barley for their products. NBIC members stressed the importance of sustained funding, even after 30 years of successful work. Fusarium head blight remains a devastating disease impacting several crops throughout most of the U.S., and research funded through the Initiative has been critical to staying ahead of the evolving disease that threatens farm profitability and food security.

Members of the NBIC fly-in stressed the importance of agricultural research and the incredible return on investment realized, especially as so many of our global competitors are outpacing our investments. Given the new Administration's priority to support domestic self-reliance and reversal of the agricultural trade deficit, initiatives like the RBI are critical to bolster resilience in the supply chain and to lessen the reliance on imported barley.

"Our Hill climb was timed perfectly this year as federal appropriators were hard at work identifying their funding priorities for FY27," said **Ashley McFarland**, who serves as executive secretary of the NBIC. "Not only were we able to make our requests for federal research support, but we were able to illustrate how these federal vacancies inhibit our ability to conduct the work they have supported through appropriations. We urged Congress to address this issue with USDA and the Administration so that this important research can continue."

The American Malting Barley Association is a trade organization, which represents the interests of end users of malting barley, including maltsters, brewers, distillers, and food processors. Our work seeks to maintain a stable and high-quality supply of malting barley for our members throughout the U.S. Learn more here: www.ambainc.org.

The National Barley Improvement Committee represents the U.S. barley community of growers, researchers, processors, users, and allied industries. We advocate for sound agricultural policy and strong public support for agricultural research throughout the U.S. Learn more here: http://ambainc.org/nbic/.

Members of the National Barley Improvement Committee outside Senator Hoeven's office after a visit with staffer Calla Wickenhauser. NBIC delegation from North Dakota included (L to R): Scott Nelson (North Dakota Barley Council), Cameron Matthews (North Dakota State University), Nathan Boll (North Dakota Barley Council), Thomas Baldwin (North Dakota State University), and Brian Schaetz (RahrBSG).

COMMUNITY NEWS

FHB WHEAT RESISTANCE

Seeking Manuscript Submissions

The Journal *Frontiers in Plant Science* is seeking manuscript submissions for their Research Topic: Interdisciplinary Approaches to Decipher and Deploy Fusarium Head Blight Resistance in Wheat. All article types published by *Frontiers in Plant Science* that leverage interdisciplinary strategies to advance FHB control are welcomed, especially those focusing on:

- Systems biology of plant-pathogen interactions, integrating multi-omics to map resistance networks.
- Discovery and functional characterization of novel resistance genes or alleles through forward/reverse genetics and gene editing.
- Mechanistic dissection of pathogen virulence and host immunity, leading to new targets for intervention.
- Advanced breeding strategies (e.g. genomic selection, pyramiding) for deploying durable FHB resistance into elite genetic background.

SUBMISSION DEADLINE: JULY 16, 2026

For more information on the types of articles accepted and to submit please visit the Research Topic webpage.

CALENDAR

USWBSI EVENTS

DECEMBER

7-9 2026 National Fusarium Head Blight Forum, Louisville, KY

OTHER EVENTS

JUNE

21-26 Fusarium Laboratory Workshop, Manhattan, KS

AUGUST

1-4 Plant Health 2026, Providence, RI

OCTOBER

5-6 7th International Symposium on Fusarium Head Blight, Perugia, Italy

COMMUNITY UPDATES

Welcome New Interns

These students are all interns this summer at Grow Pro Genetics.

Culhan Carr is a B.S. student studying agricultural business at Kansas State University. His summer internship will focus on identifying customer marketing needs and a plan to address gaps.

Max Gorman is a M.S. student studying integrative biology at the University of Illinois. His summer project will assess wheat pest management and mitigation practices both pre- and post-harvest.

Gary Liu is a M.S. student at Purdue University studying agricultural and biological engineering. This summer he will be exploring soil by variety interactions during his internship.

Temidayo Joseph Oke is a student at the University of Wisconsin working on his B.S. degree in biological inorganic chemistry and structural biology. His summer project will explore the effects of seed treatment.

Mia Rubinstein is a B.S. student at the University of Nebraska-Lincoln where she is studying agronomy. Her internship this summer will evaluate effective methods for communicating Grow Pro Genetics' research to consumers and farmers.

Viola Strangle is a student at Southern Illinois University. She is working towards her B.S. in ecology. Her project focuses on the evolution and conservation to maximize fertilizer return through targeted soil nutrient assessment.

Kudos to Those Starting New Positions

Grace Carey is a new ORISE post-doctoral researcher working with **Briana Whitaker** at the USDA-ARS Mycotoxin Prevention and Applied Microbiology Research Center in Peoria, Illinois. Her project will focus on developing a synthetic community of fungi which can be used to study the effects of fusarium head blight on barley head microbiomes.

Jonathan Hanson is a new ORISE fellow at USDA-ARS National Center for Agricultural Utilization Research (NCAUR) in Peoria, Illinois. Hanson obtained his master's degree at the University of Georgia under the direction of **Phil Brannen** and **Marin Brewer** studying Glomerella leaf spot and bitter rot diseases of apple. At NCAUR, Hanson will be working with **Guixia Hao** on characterizing plant and fungal interactions of Fusarium head blight (FHB) development and use RNA interference to reduce FHB and mycotoxin contamination.

Heisel Retires from AMBA

Scott Heisel retired from the American Malting Barley Association in April after more than thirty-nine years of service. Most recently he served as President since 2021, but held the position of Technical Director prior to becoming President. Heisel grew up in Milwaukee, Wisconsin with the childhood dream of becoming a farmer. He received his bachelor of science degree in biochemistry and agronomy from the University of Wisconsin and then worked at the USDA-ARS Barley and Malt Laboratory (now the Cereal Crops Research Unit) in Madison, WI. He pursued his master of science degree, also from the University of Wisconsin, and then returned home to Milwaukee and began working for the American Malting Barley Association in April of 1987.

During the 1993 Fusarium head blight endemic, Heisel led efforts to get DON testing methodologies approved by the American Society of Brewing Chemists with the assistance of North Dakota State University researchers, **Paul Schwarz** and **Howard Casper**. This early work on testing and Schwarz's research on the fate of DON in the malting process led Heisel to participate in the U.S. Wheat and Barley Scab Initiative's Food Safety and Toxicology Research Area and eventually serve as a member of the Executive Committee.

For Heisel, working with the growers, researchers, maltsters, brewers, and distillers is what makes the work so rewarding. Additional partnerships have been forged over the years through advocacy efforts with the wheat growers and millers, to create a successful coalition with focused messaging to serve the small grains community. One of Heisel's most valuable contributions was working with other advocacy groups to increase the authorization for the USWBSI in the 2018 Farm Bill from $10 to $15 million and limiting the increase in allowable indirect costs to 10%.

In his retirement, Heisel will enjoy traveling with his wife Lisa, including visiting their granddaughter in Florida.

The USWBSI is deeply grateful to Heisel for his decades of leadership and tireless advocacy. From his early work on DON testing, and his instrumental role in securing increased funding for the USWBSI, to his five valuable years on the Executive Committee, his impact on the FHB community is immeasurable. The USWBSI thanks him for his service and wishes him the very best in retirement.