



FUSARIUM FOCUS

FROM FLOWER TO FLOUR

Quality Priorities from a Millers' Perspective

This issue of *Fusarium Focus* highlights a milling company to provide increased awareness of the general perspectives and enhance communications about the milling industry.

Like other trades, the milling industry has its own set of challenges. "One of the biggest challenges is understanding environmental impacts to the wheat crop each year," says Reuben McLean, senior director of quality and regulatory for Grain Craft, the third largest U.S. flour miller in the United States. Since wheat is sourced from a wide range of origins, the variability in both grains and baking quality must be managed carefully to deliver a consistent end-product to consumers. In addition to quality considerations, the impact of the environment on potential hazards, such as mycotoxins, must also be considered. Fusarium Head Blight (FHB) can be a concern for millers. "Deoxynivalenol (DON), often referred to as vomitoxin, is a prominent mycotoxin the milling industry deals with each year," says McLean. The industry works with supply chain partners to minimize the risk of DON in the harvested grain. Millers must follow the advisory levels established by regulators for mycotoxin concentration in finished flour. Therefore, work is done to identify and understand the risk of FHB each year.

Since FHB risk varies by wheat origin, with the greatest concerns in regions experiencing cool, wet conditions during flowering, millers work closely with supply chain partners to ensure deliveries meet regulatory guidelines. The industry supports and promotes growers planting FHB tolerant wheat varieties as the first step to mitigate FHB risk. To reduce the risk of contamination, grain testing may be conducted at the



"Deoxynivalenol (DON), often referred to as vomitoxin, is a prominent mycotoxin the flour milling industry deals with each year."



time of wheat delivery. If a specific origin is predicted to have higher risk for the year, each inbound delivery is sampled and tested to mitigate the risk in the finished product.

In addition to FHB, there are other challenges the milling industry continues to deal with each year. "Potential for mycotoxins and microbial

pathogens associated with raw agricultural commodities, such as wheat, continue to be topics of interest for state and federal regulators," says McLean. In recent years, there's also been a steady decline in the wheat planted acreage. This is presenting challenges for the domestic supply chain. In addition,

A Miller's Perspective, continued next page

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 nearly 150 research projects in more than 30 states..

USWBSI Steering Committee

Tom Baldwin, North Dakota State University
Kaitlyn Bissonnette, Cotton, Inc., NC
Carl Bradley, University of Kentucky*
Rick Boyles, Clemson University
Austin Case, ABInBev, CO
Oswald Crasta, USDA-ARS, MD*
Alyssa Collins, Pennsylvania State University
Frankie Crutcher, Montana State University
Ruth Dill-Macky, University of Minnesota**
Jeff Edwards, University of Arkansas – SAAESD
Alexis "Lexi" Freier-Johnson, Dakota Growers Pasta Company, MN
Andrew Friskop, North Dakota State University
Pravin Gautam, BASF, NE
Andrew Green, North Dakota State University
Joleen Hadrich, University of Minnesota – NCRA
Scott Heisel, American Malting Barley Association, WI*
Rich Horsley, North Dakota State University*
Dustin Johnsrud, North Dakota Wheat Commission
Bryan Jorgenson, South Dakota Wheat Commission
Dave Kendra, Cibus, CA
Louis Kuster, U.S. Durum Growers Association, ND
Richard Magnusson, Magnusson Farms, MN**
Esten Mason, Colorado State University*
Reuben McLean, Grain Craft, ID*
Grant Mehring, Monsanto, KS
Molly Miller, North American Millers' Association, VA
Gary Muehlbauer, University of Minnesota*
Scott Nelson, North Dakota Barley Council
Jessica Rupp, Kansas State University
Paul Sadosky, MillerCoors, WI
Jyoti Shah, University of North Texas
Kevin Smith, University of Minnesota
Clay Sneller, The Ohio State University
Kevin Thorsness, Bayer CropScience, ND
Lisa Vaillancourt, University of Kentucky
Jake Westlin, National Association of Wheat Growers, DC
Steven Xu, USDA-ARS, CA*
Xiang Yin, Rahr Corporation, MN
Marv Zutz, Minnesota Barley Council

*USWBSI Executive Committee Members

**USWBSI Co-Chairs

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

Networking & Facilitation Office (NFO)
Michelle Bjerkness, Director of Operations
495 Borlaug Hall / 1991 Upper Buford Circle /
St. Paul, MN 55108

nfo@scabusa.org / 517.290.5023

<https://scabusa.org>

Twitter @USWBSI / LinkedIn #uswbsi



Grain Craft's Birmingham, Alabama mill.

logistical challenges such as transporting inbound raw materials and outbound finished flour to customers continue to be a concern. Finally, millers must always find the balance between grain yield and protein content and baking quality to ensure that the quality of the crop is maintained to meet consumer needs.

While the industry works diligently each year to combat these issues, McLean also looks forward to supporting the USWBSI's efforts to strengthen collaborations with industry organizations, such as the National Grain and Feed Association and the North American Millers Association and sees an opportunity to work towards providing additional resources, communications, and alignment for mitigation strategies.

About Grain Craft

Grain Craft, the third largest flour miller in the United States, is a family-owned milling company offering premium bulk and bagged flours for the baking, food service, pizza, and tortilla industries. With over 100 years of history, the company continues the tradition of working with American farmers to grow and harvest the best varieties of wheat to provide customers industry-leading flour. Headquartered in Chattanooga, Tennessee, Grain Craft serves customers from coast to coast through 12 milling locations. People are the core of the company, driving excellent, safe products and bettering communities.

ABOUT REUBEN MCLEAN

Reuben McLean is the senior director of quality and regulatory for Grain Craft and is based in Idaho. In his role, McLean oversees wheat research and testing at the Innovation and Quality Lab. He is also responsible for monitoring quality and regulatory compliance at all locations. Outside of his everyday work, McLean also serves on several industry committees representing both Grain Craft and the milling industry in general. Currently, he is serving as the milling industry representative on the U.S. Wheat and Barley Scab Initiative's Executive and Steering Committees. ●

Welcome to the New Members

Elections for new Executive Committee, Steering Committee, and Research Area and Coordinated Project Committees were held in the Fall of 2022. Here are the new Steering Committee members whose terms started January 1, 2023.



Rick Boyles, Clemson University, Florence, South Carolina. Boyles is a cereal crop breeder whose research focuses on cereal crop improvement using traditional and

advanced plant breeding approaches. He obtained his bachelor's in biological sciences from the University of South Carolina and his doctorate degree in genetics from Clemson University. His research goals are to develop superior performing varieties for the region, increase the diversity of the current gene pool for regional breeding populations, and identify and deploy genes for important traits such as grain yield and quality. Boyles serves on the Steering Committee given his role as the new chair of the Variety Development and Host Resistance Southern Winter Wheat Uniform Nursery Coordinated Project.



Joleen Hadrich, University of Minnesota, St. Paul, Minnesota. Hadrich is currently the interim associate dean for the Minnesota Agricultural Experiment Station

and Research and Outreach Centers. In addition to her new role as associate dean, she is also an associate professor in the Department of Applied Economics and is an extension educator. Her research focuses on agricultural finances and production economics, emphasizing farm profitability while her extension work focuses on farm management decisions and their interactions with environmental and applied economic restraints. Hadrich represents the North Central Regional Association of Agricultural Experiment Station Directors on the Steering Committee.



Reuben McLean, Grain Craft, Blackfoot, Idaho. McLean currently serves as senior director of quality and regulatory for Grain Craft, the third largest independent

flour miller in the country. He has been actively involved in the wheat industry for over 20 years, initially working with the University of Idaho wheat breeding program, followed by his current career in flour milling. He obtained his bachelor's in crop science from Utah State University and a master's in plant science from the University of Idaho. He is an active member of the NAMA (North American Millers Association) Technical Committee, ABA (American Baker's Association) Food Technical Regulatory Affairs Committee, and IAOM (International Association of Operative Millers) Food Protection Committee. McLean represents the milling industry from a hard wheat perspective on both the Executive and Steering Committees.



Molly Miller, North American Millers' Association (NAMA), Arlington, Virginia. Miller is the vice president of regulatory and technical affairs and joined NAMA

in 2023. Previously, she led the lobby and advocacy efforts on trade, supply chain, biotechnology, and tax issues for BASF. In her current role, Miller provides oversight of NAMA's engagement on issues pertaining to food and feed safety, research, biotechnology, and worker safety. Along with others at NAMA, Miller interacts with federal agencies and industry stakeholders to build relationships on behalf of the milling sector. Miller represents the soft wheat milling industry on the Steering Committee.



Scott Nelson, North Dakota Barley Council, Lakota, North Dakota. Nelson is a graduate of North Dakota State University. Farming with his wife, their operation

produces barley, spring wheat, pinto beans, sunflowers, canola, soybeans, and corn. They are also involved in hog farrowing and the feed industry. He is the Northcentral (District 2) representative on the North Dakota Barley Council Board of Directors. Nelson is the North Dakota Barley Council representative on the Steering Committee.



Steven Xu, USDA-ARS, Albany, California.

Xu is a research geneticist with extensive experience in basic and semi-applied research on the genetics of bread

wheat, durum wheat, and related species. He has identified several novel Fusarium head blight (FHB) sources of resistance in wheat and related species. He has developed molecular markers linked to genes related to FHB resistance that could be utilized in the introgression of these genes into adapted germplasm. He has received several awards for his outstanding research. He has been an active member and past chair on the durum coordinated project committee. Xu represents durum pathology on the Executive and Steering Committees.



Lisa Vaillancourt, University of Kentucky, Lexington, Kentucky. Vaillancourt is a plant pathologist whose research focuses on understanding the molecular mechanisms

of fungal pathogenicity to plants. She received her bachelor's in biology from the University of Connecticut, her master's degree in plant pathology from the University of Illinois, and her doctorate degree in plant pathology from Purdue University. Her research goal is to develop improved methods for management of important fungal diseases. Her lab uses a combination of cytology, genetics, and genomics to address research questions. Vaillancourt serves on the Steering Committee given she is the new chair of the Pathogen Biology and Genetics Research Committee. ●

The Wheat and Barley Genetic Engineering Facilities Are Open to the FHB Research Community

RONG DI / Rutgers University, MICHAEL A. LAWTON / Rutgers University, and HAROLD TRICK / Kansas State University

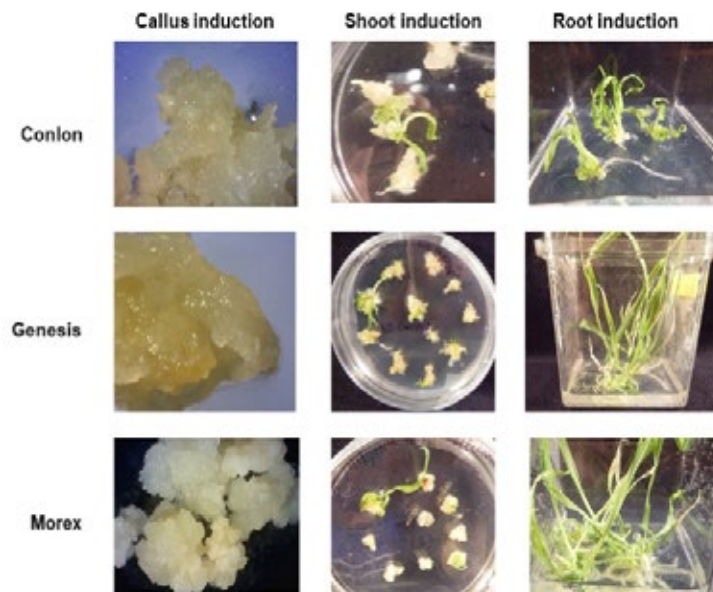
Did you know the USWBSI is currently funding two centralized genetic engineering and gene editing facilities as a cost-effective way of providing USWBSI researchers with transgenic and gene edited plants?

The Barley Genetic Engineering Facility is in the Department of Plant Biology, at Rutgers, the State University of New Jersey, New Brunswick, New Jersey, under the direction of **Dr. Rong Di** and **Dr. Michael A. Lawton**. The Wheat Transformation/Gene Editing Facility is housed in the Department of Plant Pathology, Kansas State University (KSU) under the direction of **Dr. Harold Trick**. These centralized facilities eliminate duplications of individual research groups in having personnel and resources dedicated in the production of transgenic/gene-edited events for their scab-related research.

What do these facilities provide?

The Barley Genetic Engineering Facility accepts requests from barley researchers to develop tissue culture, transformation, and regeneration protocols for their chosen barley cultivars. Once a successful tissue culture protocol is established, the lab will accept requests for gene transformation experiments using the specific barley cultivar. Confirmed T₁ transgenic barley seeds will be delivered to the requesting researchers, along with the USDA-APHIS permits that they provide. Currently, successful transformation and regeneration protocols have been developed for the two-rowed cvs. 'Conlon' and 'Genesis' and the six-rowed cv. 'Morex' using immature scutellum as the explant. Transgenic barley plants can be produced via both biolistic bombardment and *Agrobacterium*-mediated transformation. The selectable marker is the hygromycin resistance gene.

With the support of funding from the USWBSI, the laboratory of Drs. Di and Lawton has developed CRISPR-gene



An overview of the barley transformation process.

editing platforms for barley with single-guide RNA to knock-out a gene and dual/multiple tRNA design for multiplexed gene editing. The Barley Genetic Engineering Facility provides guidance on CRISPR-gene editing vector designing and accepts gene editing requests from barley researchers.

The Wheat Transformation/Gene Editing Facility accepts transformation and gene editing requests from researchers working on FHB-related research. Transformation requests will be processed in order of receipt; however, clients active with the USWBSI and those requesting agronomically adapted germplasm would have priority. Researchers without an active USWBSI grant but working on FHB-related research would need to get approval from the Gene Discovery and Engineering Resistance Research Committee. Clients would provide vectors for transformation/gene editing. Three to five months after initiation of a

project putative events will be screened for glufosinate resistance by herbicide painting and then DNA samples will be collected for PCR analyses for presence of the transgenes. PCR testing for the *bar* gene will occur at KSU, testing for the gene of interest (GOI) will be performed either at KSU or by the individual PI as predetermined during consultation. Transgenic events will be grown to maturity at KSU and T₁ generation seeds will be harvested, packed and shipped to clients for downstream analyses. Clients would expect delivery of seeds starting approximately six months from project initiation. Prior to shipment clients would be responsible for obtaining an APHIS permit for movement of regulated articles.

What is the cost of this service?

There is no charge for USWBSI funded researchers.

HOW TO GET STARTED

For more information and links to submission forms to request service visit the [USWBSI Transformation Lab webpage](#) or contact Rong Di (rongdi@sebs.rutgers.edu) or Harold Trick (hnt@ksu.edu). ●

USWBSI Steering Committee Focused on Action Plan for Biennial Spring Meeting

The USWBSI Steering Committee Spring Meeting was held in person April 14, 2023. A core component of this year's meeting was the opportunity for the Research Area and Coordinated Project Chairs to report on progress from the last two years and identify unmet needs, which helped inform the stakeholder breakout sessions that reviewed and recommended updates to the Initiative Action Plan. The Action Plan serves as the guiding tool for the Initiative to align USWBSI priorities on the latest research on Fusarium Head Blight (scab) and deoxynivalenol (DON). Feedback will now go out to the Committees for review, with an updated Action Plan to be published in May. Additional discussions took place on the process for setting of the USWBSI Working Caps for the FY24 RFP, a potential Code of Conduct addition to the USWBSI Policies and Procedures, highlights on recent outcomes of the Communications Plan, and an update on plans for the 2023 and future National FHB Forums. The Steering Committee



The USWBSI Steering Committee heard key reports, and spent time brainstorming and updating the Action Plan during their recent meeting in Minnesota.

also heard updates from the USDA-ARS, National Barley Improvement Committee, and National Wheat Improvement Committee. These reports provided guidance for planned advocacy efforts which are underway to request both an increase in the authorization

of the USWBSI in the Farm Bill and respond to the President's Budget to ensure USWBSI funding remains at the current level. Minutes of the meeting are being prepared and will be available for the FHB community after review and approval by the Steering Committee. ●

SCABSOURCE

*A Resource for
All Your FHB
Publication Needs*



ScabSource Publication Database

The USWBSI Publication Database provides an easy way to search scientific publications that are relevant to Fusarium Head Blight of wheat and barley. Some publications in this database have been funded (partially or fully) by the USWBSI (indicated by the logo) and others are posted here for inclusion due to their importance to the Scab Community.

Publications may be submitted by clicking here [Submit Publication](#)

Search title keywords, authors, or publication year

Pages: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#) [12](#) [13](#) [14](#) [15](#) [16](#) [17](#) [18](#) [Next](#)

179 results

Working on a grant and looking for Fusarium Head Blight, wheat, or barley references? Looking for citations for a project proposal, thesis, or dissertation?

Check out the USWBSI's publications database, [ScabSource](#), featuring nearly **180** peer-reviewed publications and growing. Each publication listed includes the direct DOI link to guide you to the journal website to download citations into your reference manager software.

Key publications date back to 1997, but the majority were added starting in 2022 and forward with more added weekly. If you know of a publication that should be included, simply [submit your publication for approval](#) (login is required). ●

Developing Your Career in the USDA-ARS

On the evening on March 7, graduate students, post-doctoral researchers, and staff members joined the ScabNet Early Career Webinar to learn more about careers within the USDA-ARS.

Co-Organizer **Peter Oppenheimer** (North Carolina State University) introduced the speaker, **Tim Widmer**, PhD, USDA-ARS, national program leader for plant diseases. Widmer joined the USDA-ARS in 2000 as a research plant pathologist and in 2018 became a national program leader.

Widmer started off by showing the attendees the structure of the USDA. The USDA-Agricultural Research Service (ARS) has a Secretary and then an Under Secretary for Research Education and Economics. ARS is one of four Agencies in the USDA Research, Education, and Economics mission area. The ARS budget is currently \$1.7 billion annually.

What do national program leaders (NPLs) do? Well, they lead the programs. They promote, coordinate, and communicate the research to ARS, international partners, and stakeholders. In addition, NPLs write news articles, agreements, variety releases, and budget reports. They are also responsible for developing budget initiatives. NPLs also must assess their programs, write reports, and provide briefings for congress and other stakeholders who might want this information.

USDA-ARS research budgets are determined by the Executive Branch, Congress, stakeholders, the scientific community, as well as the agency scientists and leaders. Every five years each USDA-ARS program is reviewed. Input is solicited from stakeholders, and the scientific merit, project implementation, and the quality is evaluated.

There are four USDA-ARS National Programs: Animal Production and Protection, Natural Resources and Sustainable Ag Systems, Nutrition, Food Safety, and Quality, and Crop Production and Protection. Widmer's program, Plant Diseases, falls under Crop Production and Protection. The Plant Disease program includes plant pathologists, molecular biologists, plant physiologists, geneticists, and entomologists and has over 132 scientists and 55 projects, at 29 different USDA-ARS locations. The types of research covered includes mostly basic and applied with some developmental. "The vast majority of pathogens are fungi, and then it's split pretty evenly between viruses and bacteria," said Widmer. The largest focus is breeding and developing resistance to pathogens. But the program also looks at fungicides, cover crops, and biological controls.

USDA-ARS is highly dependent on collaboration. Collaborations include universities, private companies, state and local governments, Federal agencies, and international partners. In addition, USDA-ARS partners with other Federal partners such as APHIS, NIFA, and the Forest Service.

After giving an overview of the USDA-ARS, Widmer provided the story of his career path. He began his career at the University of Florida where he received his doctorate degree working on a phytophthora disease of citrus. He then completed a post-doc at Cornell University working on a carrot nematode. From there his first USDA-ARS position was located at the USDA-ARS lab in

France which is dedicated to biological control of invasive species. In 2006, he returned to the United States to the USDA-ARS Lab in Fort Detrick, MD. In 2018, he became a National Program Leader located in Beltsville, MD.

Widmer's career path has led him to many locations throughout the world. His personal goal and advice to others is "to diversify projects at each step." Widmer's theme was sustainable agriculture and biological control but as he moved, he changed his pathosystems. This allows one to expand your opportunities for careers. "Once you get that PhD you're often locked into that topic," says Widmer. So, it's important to diversify at every step if you can.

Widmer highlighted the unique aspects of a position in government, compared to academia and industry to help provide a better understanding of what might be expected. He shared that the hiring process can take some time to navigate and encouraged those who are interested in USDA-ARS career opportunities to check out all the vacancies that are posted on the [USAJOBS](#) website. Applicants can search on position type, location, and set up alerts to be notified about positions of interest when they become available. All job postings state the requirements associated with each position including citizenship (if applicable) and allow application directly through the website.

Overall, the evening was very informative, and the attendees received a lot of valuable knowledge from Widmer. The USWBSI would like to thank Widmer for providing this opportunity and for all his work this past year as the USDA-ARS PI of the USWBSI.

If you missed or would like to re-watch the webinar, the [recording is now available on the ScabNet](#) webpage. ●





Spotlight on Dr. Fred Kolb, Professor Emeritus with the University of Illinois

CARL BRADLEY / *University of Kentucky* and JESSICA RUTKOSKI / *University of Illinois*

Fred Kolb, PhD, long-time wheat and oat breeder with the University of Illinois at Urbana-Champaign (UIUC) retired in 2019. Fred, a native of Pennsylvania, dedicated his 32-year career in Illinois towards wheat and oat improvement. A large portion of Fred's breeding efforts was focused on improving resistance to Fusarium head blight (FHB) in soft red winter wheat. Under Fred's direction, the UIUC wheat breeding program released over 50 lines. The majority of these lines were licensed to various seed companies for brand labeling and have been planted across several million acres throughout the northern soft red winter wheat production area in the U.S. During Fred's last 10 years at UIUC, over 2 million units of seed of wheat lines that he developed were sold to farmers. Much of Fred's efforts were focused on utilizing native resistance to FHB, which resulted in the development of some of the most resistant lines available. Fred also collaborated with other winter wheat breeders in the northern U.S. to achieve significant genetic gains in resistance to FHB across the region. This group breeding effort resulted in a 0.11 parts per million per year reduction in deoxynivalenol (DON) content in harvested grain between 1998 and 2018 (Gaire et al. 2022), a considerable advancement in the management of FHB and DON.

In addition to improving FHB resistance, Fred's program also emphasized breeding for highly productive lines that were early maturing. Since wheat harvest across most acres in Illinois and some of the surrounding states is directly followed by "double-crop" soybean planting, the development of productive, early maturing wheat lines allows for earlier planting of soybean which helps improve soybean yield and the overall economics of the wheat/double-crop soybean production system.

Fred was the Jack A. and Marjorie S. Cavanah professor of plant breeding and genetics in the Department of Crop Sciences



at UIUC from 2009 until his retirement in 2019. He published over 90 refereed articles and mentored 16 graduate students over the course of his career. He served on the U.S. Wheat and Barley Scab Initiative Executive Committee and Steering Committee from 2006 to 2018 and was involved with the Initiative since its inception.

In his retirement, Fred enjoys spending time with his grandchildren, golfing, and fishing. He and his wife, Judy, reside in Champaign, IL.

REFERENCE:

Gaire, R., Sneller, C., Brown-Guedira, G., Van Sanford, D., Mohammadi, M., Kolb, F. L., Olson, E., Sorrells, M., and Rutkoski, J. 2022. Genetic trends in Fusarium head blight resistance from 20 years of winter wheat breeding and cooperative testing in the northern U.S.A. *Plant Disease* 106:364-372. <https://doi.org/10.1094/PDIS-04-21-0891-SR>. ●

NEW FUNDING OPPORTUNITIES

Feed the Future Innovation Lab for Climate Resilient Cereals

The United States Agency for International Development (USAID) is seeking applications for a Leader with Associates Cooperative Agreement from qualified entities to implement a new global activity: **Feed the Future (FTF) Innovation Lab for Climate Resilient Cereals (CRCIL)**, which aims to design, lead, and implement a research program focused on the discovery/identification of novel alleles for traits critical in climate adaptation, validate

and transfer to elite lines of rice, wheat, sorghum and millet in FTF countries and adjacent areas with similar farming systems. Eligibility for this award is restricted to U.S. colleges and universities as defined under Section 296(d) of Title XII of the FAA. Subject to the availability of funds, an award will be made to the responsible Applicant whose application best meets the objectives of this funding opportunity and the selection criteria contained herein. ●

For more information of this funding opportunity, visit the [Grants.gov website](https://www.grants.gov).



National Barley Improvement Committee Makes a Full, In-Person Return to the Hill

ASHLEY MCFARLAND / NBIC Vice President & Technical Director

The National Barley Improvement Committee, which represents the U.S. barley community of growers, researchers, processors, users, and allied industries, participated in their first fully in-person trip to Washington D.C. since 2020. The team of 30+ barley enthusiasts attended over 90 Hill visits March 6-8, 2023, advocating on behalf of federal research funding for the barley industry.

NBIC's priority ask sought an increase to the appropriation for the Barley Pest Initiative (BPI). The BPI is an effort to strengthen research capacity to address over 20 insects and diseases that impact barley yield and quality through development of new resistant varieties and management strategies. In the most recent spending bill, the BPI received \$3 million in support, but the NBIC team is actively working to secure an additional \$2.3 million to bring the total in FY24 to \$5.3 million annually. Already, in just two years of partial funding, the researchers working on the BPI have made great progress. [You can read more about this work on the American Malting Barley Association website.](#)

Coming off a successful hybrid fly-in in 2022, the NBIC team wanted to get their members back to the Hill, especially given so many new Congressional members that had not been exposed to the Barley Pest Initiative. The reopening of buildings and offices was welcomed and allowed for a nice mix of NBIC veterans and many new members to interact and engage in lobbying efforts. In addition to the BPI, [support was also vocalized for other initiatives and agencies](#) within the USDA that are critical to the barley industry as outlined in their [legislative priorities](#). This included an ask to increase the authorization of the U.S. Wheat and Barley Scab Initiative (USWBSI) in the next Farm Bill from \$15 million to \$20 million annually. NBIC believes that the rising costs of research necessitates this increase in order for barley and wheat to stay competitive.

"There was great energy in D.C., both from our NBIC members and throughout



Members of the National Barley Improvement Committee visit with Senator Risch during their Hill visit on March 6-8, 2023.

the halls of Congress," said Ashley McFarland, who serves as executive secretary of the NBIC. "Although I'm grateful for the virtual options we had to interact with Congress over the last two years, there's nothing like being on the Hill and engaging in the process of advocating for your industry in-person. We will continue to use all platforms available to communicate our needs, but I'm hoping this marks a permanent return to our annual spring fly-in."

The general takeaway from the Hill was that support for agricultural research is strong, reinforced by a [documented \\$20:\\$1 return on investment](#). Nonetheless, the make-up of the 118th Congress may pose some challenges to increase funding on initiatives like the BPI. Despite realizing three consecutive years of steady funding increases, it is important to manage expectations. Furthermore, upon return from D.C., the President's Budget was released, which called for some alarming cuts to initiatives that include extramural funding, including the USWBSI. NBIC members immediately got to work voicing the importance of the partnerships between the Agricultural

Research Service and our Land Grant institutions and that cutting that funding would be a significant detriment to progress made on tackling Scab. NBIC will continue to monitor this situation and will strongly advocate for the appropriate research funding needed to support a competitive barley industry.

The American Malting Barley Association (AMBA) is a trade organization, which represents the interests of end users of malting barley, including maltsters, brewers, distillers, and food processors. AMBA's 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. NBIC advocates for sound agricultural policy and strong public support for agricultural research throughout the U.S. Learn more here: <http://ambainc.org/nbic/>. ●



Impressions from the National Wheat Improvement Committee's Hill Visit

JAKE WESTLIN / NAWG Vice President of Policy & Communications and JOCHUM WIERSMA / National Wheat Improvement Committee Chair

About half the National Wheat Improvement Committee (NWIC) members traveled in the third week of March to Washington, D.C., to meet with members of Congress and USDA-ARS leadership to advocate for public wheat research. For two days we stormed the hill to persuade key members on the agriculture appropriations sub-committees in both the House and Senate. These members include offices representing major wheat-producing regions from both sides of the aisle on the importance and need for public funding for wheat research. In addition to the NWIC members, the group was joined by staff from the National Association of Wheat Growers and North American Millers' Association.

The timing of the NWIC hill visit couldn't have been timelier. On March 9, the President's budget proposal came out, which proposed zeroing out the U.S. Wheat and Barley Scab Initiative (USWBSI) and the Small Grains Genomic Initiative (SGGI). Some will argue that the President's budget proposal is worth less than the paper it is printed on as it is Congress that ultimately decides how much and where the federal government will be allowed to spend money in the upcoming fiscal year. Nevertheless, having both initiatives zeroed out is concerning and demonstrates the need for additional hill education. While the President's budget is a messaging tool, if realized, it would be a major blow to the public wheat and barley breeding programs across the United States.

In addition to expressing our concern about the proposed cuts to the USWBSI and SGGI, the NWIC asked for an additional \$750,000 in funding for the National Stripe Rust Initiative. These new monies will be used to shore up the funding for the regional stripe rust screening nurseries. Finally, the NWIC reiterated the need for new monies to address the changing dynamics of pest and disease issues in wheat. For example, Wheat Stem Sawfly (WSS) is now causing an estimated \$350 million in damages annually. Eastern Colorado and western



Members of the National Wheat Improvement Committee visited Capitol Hill in March to lobby for wheat research.

Nebraska have become hotbeds for WSS, and the problem in some areas is so bad that producers must abandon wheat. Likewise, milder winters in the southeastern and northwestern US are causing more and more problems with Hessian fly. These funding requests are bundled together in what the NWIC calls the Wheat Resiliency Initiative.

Below are the highlights of how Congressional offices and the USDA-ARS leadership responded to the NWIC concerns and requests:

- There is very strong support in both the Senate and House for the USWBSI and SGGI to be funded at the current level.
- There is support for the Wheat Resiliency Initiative ask. However, this support is stronger and more realistic on the Senate side than on the House side. This can be explained by the fact under the current House rules, where there is a desire to return to fiscal year 2022 funding levels, which would require any new spending has to be offset by a cut somewhere else.
- The same is true for the National Stripe Rust Initiative ask.
- USDA-ARS leadership is very supportive of all the NWIC asks.

In short, the public wheat research community that relies on the USWBSI and the SGGI can breathe a sigh of relief as funding is likely not going to disappear overnight. There is good support for new monies, but whether Congress can find additional funding under the current leadership and political dynamics remains to be seen.

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/>. ●



Kudos to those Starting New Positions



Caleb Hale is a new PhD student in the Plant Sciences and Plant Pathology Department at Montana State University. Hale is working with **Mike**

Giroux, PhD, on developing and testing durum FHB resistance genes.



Judith Kolkman, PhD, is a new post-doctoral researcher at Cornell University in Ithaca, NY. Kolkman is in the School of Integrative Plant Sciences working with **Mark Sorrells**,

PhD and **Gary Bergstrom**, PhD.



Nick Rhoades, MS, is a new ORISE fellow at the USDA-ARS Mycotoxin Prevention and Applied Microbiology Research Unit in Peoria, IL working with **Guixia**

Hao, PhD, on the characterization of *Fusarium* effectors and the control of FHB using RNAi technology. Rhoades earned a MS degree from Illinois state University and will defend his PhD dissertation in the Spring of 2023.



Julio Sellani, is a new MS student in the School of Plant, Environmental, and Soil Science at Louisiana State University. Sellani is working with **Stephen Harrison**, PhD,

and **Noah Dewitt**, PhD, on characterizing the relationship between plant height genes and genomic predictions for FHB resistance.



Leva Tolkaciovaite, MS, is a new ORISE fellow at the USDA-ARS Mycotoxin Prevention and Applied Microbiology Research Unit in Peoria, IL working

with **Hye-Seon Kim**, PhD on determining the contribution of *Fusarium* diversity on disease variability and mycotoxin severity in barley screening nurseries. In addition, Tolkaciovaite is also aiding in facilitating the incorporation of pathogen genotype data into the variety screening programs to enhance the resilience of FHB resistance.



Gabdiel Yulfo-Soto, MS, is a new ORISE fellow at the USDA-ARS Mycotoxin Prevention and Applied Microbiology Research Unit in Peoria, IL working with

Guixia Hao, PhD, on the characterization of *Fusarium* effectors and investigating plant transporters to reduce FHB. Yulfo-Soto received an MS degree from the University of Kentucky studying

the role of recombination of FHB and *Fusarium graminearum* diversity under the direction of **Lisa Vaillancourt**, PhD.

Welcome New PIs



Noah Dewitt, PhD, is a new assistant professor in quantitative genetics and wheat breeding at Louisiana State University. DeWitt filled **Stephen**

Harrison's, PhD, position as the soft winter wheat breeder. Harrison will continue to assist in the breeding program for the next couple of years as DeWitt transitions into his new role.



Madalyn Shires, PhD, is a new assistant professor and extension plant pathology specialist at South Dakota State University. Shires took over **Emmanuel**

Byamukama's, PhD, project on evaluating fungicide efficacy for FHB.

Oswald Crasta Named the New National Program Leader for Small Grains and USWBSI USDA-ARS PI



The USDA-ARS announced **Oswald Crasta**, PhD, as the new national program leader for small grains effective February 12, 2023. Crasta comes to ARS with over 30 years of experience in agronomy, crop physiology, plant genetics and genomics from both academia and industry professions. His previous position was the chief scientific officer at Equinom Inc., a plant-based food crop breeding company, where he worked for three years. Prior to his position at Equinom, Crasta served as the global research and development leader at Corteva

Agriscience. Before that, he was a project director at Virginia Tech, where he led a collaborative research team developing and applying genomics and bioinformatics infrastructure for emerging and reemerging infectious diseases. Crasta earned his doctorate degree from Cornell University in crop science and has authored more than 60 publications and 25 patents/patent applications during his career. The USWBSI appreciates the service of **Tim Widmer**, PhD, this past year during the hiring transition after the retirement of **José Costa**, PhD. We look forward to Crasta offering his guidance to the USWBSI. He has effectively stepped right in with his recent participation in the Executive and Steering Committees. Please join us in welcoming Crasta into his new role with the USWBSI. ●

Canada is hosting the 6th Fusarium Head Blight International Symposium

Co-Chairs: **DILANTHA FERNANDO** / University of Manitoba and **GOPAL SUBRAMANIAM** / Agriculture Agrifood Canada

International Symposium Fusarium Head Blight



The last time the international FHB community met was in Brazil in 2016. Canada is ready to greet and host world class scientists at the beautiful Niagara peninsula, in Ontario in 2024! You will have the best of science and the best view of the Niagara Falls at this conference!

During these intervening years, many FHB scientists have retired, but “new blood” has entered and invigorated the field. We are looking forward to hearing about them and their new ideas. We will explore ideas in the microbiome, machine learning and synthetic biology applications to address

FHB. How are agronomy models adapting to the reality of climate changes and are policies and regulatory issues keeping up with the pace of new technologies of gene editing?

Let us meet and learn in Niagara!

DATES: October 21-24, 2024

VENUE: The Marriot on The Falls, 6755 Fallsview Boulevard, Niagara Falls, Ontario, Canada

SPONSORSHIP OPPORTUNITIES: Contact [Brenda Trask](#)



USWBSI EVENTS

DECEMBER

3-5 2023 National Fusarium Head Blight Forum, Cincinnati, OH

OTHER EVENTS

AUGUST

12-16 APS Plant Health 2023, Denver, CO

OCTOBER

29-Nov 1 ASA, CSSA, SSA International Annual Meeting, St. Louis, MO

NOVEMBER

5-9 National Association of Wheat Growers 2023 Fall Conference, Cincinnati, OH

JANUARY 2024

10-11 AMBA's Barley Improvement Conference, San Diego, CA

23-27 NAWG's Winter Conference, Washington DC



HOTEL RESERVATIONS NOW OPEN!

2023
NATIONAL FHB FORUM

Cincinnati, Ohio
December 3-5, 2023

