

**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY19 Final Performance Progress Report
Due date: December 30, 2021**

Cover Page

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Fiscal Year:	2019
USDA-ARS Agreement ID:	59-0206-6-001
USDA-ARS Agreement Title:	U.S. Wheat and Barley Scab Initiative's Networking and Facilitation Office and Website
FY19 USDA-ARS Award Amount:	\$ 89,007
Recipient Organization:	University of Kentucky Sponsored Projects Administration 500 S Limestone 109 Kinlead Hall Lexington, KY 40526-0001
DUNS Number:	939017877
EIN:	61-6033693
Recipient Identifying Number or Account Number:	3200000513
Project/Grant Reporting Period:	4/12/19 - 9/30/21
Reporting Period End Date:	4/11/2021

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
EC-HQ	U.S. Wheat & Barley Scab Initiative's Networking & Facilitation Office and Website	\$ 89,007
FY19 Total ARS Award Amount		\$ 89,007



Principal Investigator

12/15/21

Date

* MGMT – FHB Management
 FST – Food Safety & Toxicology
 R – Research
 S – Service (DON Testing Lab)
 GDER – Gene Discovery & Engineering Resistance
 PBG – Pathogen Biology & Genetics
 EC-HQ – Executive Committee-Headquarters
 BAR-CP – Barley Coordinated Project
 DUR-CP – Durum Coordinated Project
 HWW-CP – Hard Winter Wheat Coordinated Project
 VDHR – Variety Development & Uniform Nurseries – Sub categories are below:
 SPR – Spring Wheat Region
 NWW – Northern Soft Winter Wheat Region
 SWW – Southern Soft Red Winter Wheat Region

Project 1: U.S. Wheat & Barley Scab Initiative's Networking & Facilitation Office and Website

1. What are the major goals and objectives of the research project?

The objectives of the NFO are to:

- 1) Maintain and enhance the Resource Management/Accountability Center;
- 2) Facilitate and enhance communication within the Initiative and with its stakeholders;
- 3) Administer the process of developing the Initiative's annual recommended research plan and budget; and
- 4) Manage and implement all meetings and conferences.

2. What was accomplished under these goals or objectives? (For each major goal/objective, address these three items below.)

a) What were the major activities?

1) Resource Management/Accountability Center:

- A new backup/email server was purchased and installed. The previous system was aging and its tower case format forced it to be installed in an insecure room on a slow network. The new system was an upgrade to a rack server which allowed it to be placed in a secure server room with faster networking. The new system also had upgraded RAM, CPU speed, and storage.
- The shared file drive, email, and backup server was migrated over to the new server. All of the services had to be upgraded and reconfigured to run on the new server/new network. Several improvements were made to these services for better performance and security. A new backup system was created to perform better with the new system and to improve the secure transfer of files from the production server to the backup server. The domain's email system was also updated to further prevent mail going out from the scabusa.org domain being labelled as SPAM and to prevent domain spoofing/forgery.
- The old Forum registration system was updated to work with the new virtual Forum format. The registration scripts were re-written with new and updated fields. The database schema was also changed to accept the new data. The administrative scripts also had to be updated.
- A new virtual poster registration and viewing service was created for the virtual Forum format. A new registration system was created to allow users to register and upload virtual posters and associated videos. This system will be upgraded for the 2021 FHB Forum. The posters and videos were viewed in a newly created online viewing system. A new administration system was also created to work with the new system and the added abstracts, posters, and videos.

- A new bulletin (i.e. discussion) board system was installed and customized to work with the new virtual Forum format. It has not yet been utilized, but the system is still active on the system and ready for future use.
 - A new Year 2 Review System was created to work with the Electronic Pre-proposal System to allow for review of funding requests for continuing projects. This system required changes to the uploading of documents, administrative interface, and viewing scripts.
 - The migration process has begun to merge the Login database into the existing Contacts database. Users and institutions were synced in the two databases. The registration scripts were updated to work with the new dual database setup. The final merge of the two databases will be finished next fiscal year. This process will make the data more secure and accurate. It will also allow users to update their own information.
 - **NFHB Forum Registration System**
This year the USWBSI utilized the registration system of the University of Minnesota for payment processing of the NFHB Forum registrations. The Destiny One platform offers an out-of-the-box tool with connectivity directly to the UMN accounting system for payment processing. Staff training took place on the platform system and requirements and all setup components were put into place. A unique online registration form was then developed for the 2021 NFHB Forum, meeting parameters of the virtual event with varying attendee types and pricing. Customization was incorporated, and confirmation emails and payment receipts were implemented. Reporting tools were modified to address data requirements.
- 2) Annual Fusarium Head Blight Forum:** The annual Forum is the primary mechanism whereby USWBSI scientists and stakeholders come together to discuss both the progress being made, as well as problems that interfere, with the successful combat against this devastating disease.
- Hosted the 2019 National Fusarium Head Blight Forum: the NFO working with the Forum Organizing Committee facilitated the USWBSI's annual scientific Forum, which was held in Milwaukee, Wisconsin. The 206 registered attendees included scientists, research associates, research technicians and graduate students, growers, and industry representatives from across the nation and around the world, as well as area leaders of the U.S. wheat and barley industry. Research results and findings were presented to the Forum participants in the form of invited talks (16), Flash & Dash presentations (20) and poster presentations (67). Abstracts or papers (78) of these various presentations were published in the Forum proceedings. One morning of the

Forum was devoted to group discussions designed around the USWBSI's five research areas and three commodity-based coordinated projects.

- New for this year, was a poster competition for post doctorates (PD) and graduate students (GS). Thirty-one individuals competed in the competition, which was divided into two groups: PDs (9) and GS'(22). The posters were judged by representatives from both public and private industries. The presenters from each group with top highest scores received certificates for 1st, 2nd and 3rd place.
- Hosted the 2020 National Fusarium Head Blight Forum: The NFO working with the Forum Organizing Committee facilitated the USWBSI's annual scientific Forum, which was held via Zoom. The Forum included two and a half days of meetings held over a five day period (Dec. 7-11, 2020). We offered one of our research sessions (FHB Management) to allow for private growers, crop consultants, etc. to earn Continuing Educational Units (CEU) credits for the first time. At the end of the first day, one of our stakeholders (Siemer Milling) provided a virtual tour of some of their research plots and one of their mills. That was followed by a virtual mixer that included random breakout groups with pre-designed questions. Research results and findings were presented to the Forum participants in the form of invited talks (21), Flash & Dash presentations (18) and poster presentations (57). Following the close of each poster session question and answer session, time was allocated to group discussions designed around the USWBSI's four research areas and six coordinated projects.

The 365 registered attendees included scientists research associates, research technicians and graduate students, growers, and industry representatives from across the nation and around the world, as well as area leaders of the U.S. wheat and barley industries. Abstracts or papers (64) of these various presentations were published in the Forum proceedings.

- 3) Development of the USWBSI's FY21 Research Plan and Budget - approved by USDA-ARS in April 2021**: One-hundred and fifty-nine (159) research projects across six (6) research areas (FHB Management; Food Safety & Toxicology, Gene Discovery and Engineering Resistance; Pathogen, Biology & Genetics; Transformational Science; Variety Development and Host Resistance (includes Spring Wheat, Northern and Southern Winter Wheat Coordinated Projects)), three commodity-based coordinated projects (Barley, Durum, and Hard Winter Wheat), and the USWBSI Headquarters (Office and Website), were recommended for funding in the amount of \$8,655,897 to continue the research efforts to mitigate FHB.

b) What were the significant results?

- 1) An improved and more secure website.
- 2) First successful Forum (2020) held on Zoom, with over 385 attendees.
- 3) Finalization of the FY20 and FY21 Research Plans & Budgets (RP&B); FY21 RP&B included six new Transformational Science projects. FY22 RFP distributed with 151 pre-proposals submitted totaling \$10,488,484 in funding requests.

b) List key outcomes or other achievements.

- 1) Objective i.
 - Upgraded EPS System to accommodate review of continuing projects.
 - Upgraded backup/email server – added security and speed.
 - Development of online Poster Room for 2020 Forum, and upgraded and expanded to include viewing of abstracts for 2021 Forum.
 - New discussion board for private on-line discussions.
 - Completed move of the USWBSI’s Headquarters (NFO from Michigan State University, based in East Lansing, MI to the University of Minnesota, based in St. Paul, MN.

2) Objectives ii-iv.

In addition to organizing the 2020 National Fusarium Head Blight Forum, the USWBSI’s first Forum held using video teleconferencing (Zoom), the NFO also facilitated the finalization of the FY21 Research Plan & Budget. This included distributing a new call for pre-proposals in the early months of 2021 under the new category called Transformational Science (TSCI). The goals of this new category was to attract the expertise of early career scientists that are not currently part of the Initiative, recruit and explore new ideas and research approaches, and develop integrated projects that leverage the strengths of the Initiative. The USWBSI-NFO received 15 pre-proposals and recommended for funding 6 new projects, with funding totaling \$551,360. This new category was incorporated into the FY22 RFP, which was distributed in June, 2021.

A summary of committee meetings, conference calls, research-based workshops and committee nominations, appointments/elections that were organized, facilitated or supported by the NFO are provided in Table 1.

Table 1. Summary of Administrative Meetings, Research-based Workshops/Planning Meetings and nominations/elections/appointments facilitated or supported by the USWBSI’s Networking & Facilitation Office (NFO) during the FY19-NCE award period.

Committee/Group	# of Meetings// Nominations	Description/Purpose of Meeting/Nominations (Elections-Appointments)
Steering Committee (SC)	4 Meetings (1 in-person/ 3 via Zoom)	12-10-19: Semi-Annual Meeting – Review and approval of EC’s recommended FY20 Research Plan and Budget. 12-11-20: Semi-Annual Meeting – Review and approval of EC’s recommended FY21 Research Plan and Budget. 04-01-21: Semi-Annual Spring Meeting 12-10-21: Semi-Annual Meeting – Review and approval of EC’s recommended FY22 Research Plan and Budget.

FY19 Final Performance Progress Report

PI: Van Sanford, David

USDA-ARS Agreement #: 59-0206-6-001

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Committee/Group	# of Meetings/ Nominations	Description/Purpose of Meeting/Nominations (Elections-Appointments)
Executive Committee (EC)	11 Meetings (all via Zoom)	<p>FY21 Research Plan & Budget</p> <p>12-02-20 pm: EC met with review panels to discuss their FY21 recommendations 12-03-20 pm: EC met with review panels to discuss their recommendations; 12-02-20 pm: EC met with review panels to discuss their FY21 recommendations 12-03-20 pm: EC met with review panels to discuss their recommendations; 12-03-20 pm: EC Executive Session; 12-04-20 am: EC discussed recommendations from review panels for FY21 Research Plan and Budget (RP&B). 12-04-20 pm: EC discussed recommendations from review panels for FY21 Research Plan and Budget (RP&B). 12-11-20 pm: EC finalized plan to move forward with FY21 RP&B. 03-11-21: Finalize funding on Transformational Science Pre-proposals. 03-25-21: Semi-annual meeting – prep for SC’s semi-annual spring meeting 05-05-21: New funding model for FY22/Working Caps; 2021 and 2022 Forums. 05-12-21: Finalize Decision on 2021 Forum and discuss whether Zoom discussion for Working Caps should be open beyond SC members. 06-30-21: Discussed and set final recommendation for FY22 Working Caps.</p>
<p>FY20 Review Panels (RP) Fall of 2019</p> <p>FY21 Review Panels (RP) Fall of 2020</p>	3 Conference Calls	<p>11-11-19: MGMT RP convened to discuss panel’s review of MGMT assigned pre-proposals. 11-22-19: GDER RP convened to discuss panel’s review of GDER assigned pre-proposals. 11-25-19: MGMT IM-CP committee convened to discuss panel’s review of IM-CP assigned pre-proposals.</p> <p>All review panels scheduled their own meetings.</p>
Research Committees (RCs)	10 Planning Meetings (4 in-person/ 6 via zoom)	<p>04-23-19: VDHR-NWW Coordinated Project Planning Meeting for FY20-21. 05-10-19: Hard Winter Wheat Coordinated Project Planning Meeting for FY20-21. 05-31-19: Durum Coordinated Project Planning Meeting for FY20-21. 06-03-19: VDHR-SPR Coordinated Project Planning Meeting for FY20-21 (via conference call) 03-17-21: VDHR-SWW Coordinated Project Planning Meeting for FY22 03-17-21: Durum Coordinated Project Planning Meeting for FY22. 03-19-21: VDHR-SPR Coordinated Project Planning Meeting for FY22 04-15-21: Barley Coordinated Project Planning meeting for FY22 05-10-21: Hard Winter Wheat Coordinated Project Planning Meeting for FY22 06-07-21: Gene Discovery and Engineering Resistance Planning Meeting for FY22</p>

Committee/Group	# of Meetings/ (Zoom)/ Nominations	Description/Purpose of Meeting/Nominations (Elections-Appointments)
2021		
Grower Co-Chair	1 Appointment	Steering Committee appointed the new Grower Co-Chair recommended by the Executive Committee
Steering Committee	2 Elected	Steering Committee Election of new members for the following constituent areas: Malting & Brewing Industry, and Pasta Industry. Two individuals were elected.
Executive Committee	2 Appointments	Executive Committee: Barley (mid-term appointment) and Grower Co-Chair (all grain classes)
Research Committees	(n=7): 12 vacancies excluding Chair and Vice-Chair appointments	Research Committees (RC) appointments/re-appointments: Barley CP – 1 member and Chair Durum CP – 1 member VDHR Northern Soft Winter Wheat CP – 2 members and Chair VDHR Southern Soft Red Winter Wheat CP – 1 member and Chair FHB Management - 2 members, Chair and Vice-Chair Pathogen Biology & Genetics – 3 members, Chair and Vice-Chair Gene Discovery & Engineering Resistance – 2 members and Chair
2022 Terms SC/EC/RCS	Nominations	09-13-21: Call for nominations went out through the USWBSI FHB Listserv

3. Was this research impacted by the COVID-19 pandemic (i.e. university shutdowns and/or restrictions, reduced or lack of support personnel, etc.)? If yes, please explain how this research was impacted or is continuing to be impacted.

Yes. For the safety of our participants/attendees, the USWBSI Executive Committee decided to hold both the 2020 and 2021 Forums virtually using a video teleconferencing platform (Zoom) rather than in-person events. This meant that for the first time ever, the USWBSI had to cancel its contract with a hotel for 2020. Unfortunately, the NFO then had to cancel the contract with the same hotel again for 2021.

4. What opportunities for training and professional development has the project provided?

2019 National FHB Forum

Flash & Dash Presentations - Flash & Dash (F&D) Presentations are for graduate students, post-docs and early career professionals. Presenters give a short (5 minute) 'flash and dash' presentation of the work highlighted in their poster prior to their designated poster sessions. This exercise gives these early career scientists presentation experience and increases the visibility of their research work by

attracting interest to their poster during the poster session. Twenty individuals participated in the Flash & Dash session.

Poster Competition for Graduate Students and Post-Doctoral researchers - New this year at the 2019 National FHB Forum a poster completion was held for Post-Doctoral researchers and Graduate Students. Thirty-one individuals participated in the competition. The poster competition gives both graduate students and post-doctorates a chance to showcase their research and sharpen their presentation skills. The competition encourages these individuals to participate in the poster sessions and to interact with others who might not be in the same discipline as them. It also functions as a networking opportunity and allows them to create relationships with others who may be beneficial in their future careers and research.

2020 National FHB Forum

Flash & Dash Presentations - Flash & Dash (F&D) Presentations are for graduate students, post-docs and early career professionals. Presenters give a short (5 minute) 'flash and dash' presentation of the work highlighted in their poster prior to their designated poster sessions. This exercise gives these early career scientists presentation experience and increases the visibility of their research work by attracting interest to their poster during the poster session. Eighteen individuals participated in the Flash & Dash session.

5. How have the results been disseminated to communities of interest?

Information is disseminated through the USWBSI's list serves, website, emails, blogs, FHB-alerts, on-line articles, twitter feeds, LinkedIn, Forum proceedings, press releases and newsletters.

Training of Next Generation Scientists

Instructions: Please answer the following questions as it pertains to the **FY19 award period (4/12/19 - 9/30/21)**. The term “support” below includes any level of benefit to the student, ranging from full stipend plus tuition to the situation where the student’s stipend was paid from other funds, but who learned how to rate scab in a misted nursery paid for by the USWBSI, and anything in between.

1. Did any graduate students in your research program supported by funding from your USWBSI grant earn their MS degree during the FY19 award period?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

2. Did any graduate students in your research program supported by funding from your USWBSI grant earn their Ph.D. degree during the FY19 award period?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

3. Have any post docs who worked for you during the FY19 award period and were supported by funding from your USWBSI grant taken faculty positions with universities?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

4. Have any post docs who worked for you during the FY19 award period and were supported by funding from your USWBSI grant gone on to take positions with private ag-related companies or federal agencies?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

Release of Germplasm/Cultivars

Instructions: In the table below, list all germplasm and/or cultivars released with full or partial support through the USWBSI during the **FY19 award period (4/12/19 - 9/30/21)**. All columns must be completed for each listed germplasm/cultivar. Use the key below the table for Grain Class abbreviations.

NOTE: Leave blank if you have nothing to report or if your grant did NOT include any VDHR-related projects.

Name of Germplasm/Cultivar	Grain Class	FHB Resistance	FHB Rating (0-9)	Year Released
Not applicable to this project.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
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Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year

NOTE: List the associated release notice or publication under the appropriate sub-section in the 'Publications' section of the FPR.

Publications, Conference Papers, and Presentations

Instructions: Refer to the FPR_Instructions for detailed more instructions for listing publications/presentations about your work that resulted from all of the projects included in the FY19 grant award. Only citations for publications published (submitted or accepted) or presentations presented during the **award period (4/12/19 - 9/30/21)** should be included. If you did not publish/submit or present anything, state 'Nothing to Report' directly above the Journal publications section.

NOTE: Directly below each citation, you **must** indicate the Status (i.e. published, submitted, etc.) and whether acknowledgement of Federal support was indicated in the publication/presentation. See example below for a poster presentation with an abstract:

Winn, Z.J., Acharya, R., Lyerly, J., Brown-Guedira, G., Cowger, C., Griffey, C., Fitzgerald, J., Mason R.E., and Murphy, J.P. (2020, Dec 7-11). Mapping of Fusarium Head Blight Resistance in NC13-20076 Soft Red Winter Wheat (p. 12). In: Canty, S., Hoffstetter, A. and Dill-Macky, R. (Eds.), *Proceedings of the 2020 National Fusarium Head Blight Forum*. https://scabusa.org/pdfs/NFHBF20_Proceedings.pdf.
Status: Abstract Published and Poster Presented
Acknowledgement of Federal Support: YES (Abstract and Poster)

Journal publications.

Nothing to report.

Books or other non-periodical, one-time publications.

Nothing to report.

Other publications, conference papers and presentations.

Forum Proceedings:

Canty, S., A. Hoffstetter, and R. Dill-Macky (Eds.). 2020. Proceedings from the 2020 National Fusarium Head Blight Forum, Virtual; December 7-11. University of Minnesota, St. Paul, MN.
Online: https://scabusa.org/pdfs/NFHBF20_Proceedings.pdf

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Canty, S., A. Hoffstetter, C. Campbell and R. Dill-Macky (Eds.). 2019. Proceedings from the 2019 National Fusarium Head Blight Forum, Milwaukee, WI; December 8-10. University of Kentucky, Lexington, KY.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

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Proceedings Abstract:

De Wolf, E., D. Shah, P. Paul, L. Madden, S. Crawford, D. Hane, S. Canty, R. Dill-Macky, D. Van Sanford, K. Imhoff and D. Miller. 2019. "Impact of Prediction Tools for Fusarium Head Blight in the US, 2009-2019." In: S. Canty, A. Hoffstetter, H. Campbell and R. Dill-Macky (Eds.), *Proceedings of the 2019 National Fusarium Head Blight Forum* (p. 12), Milwaukee, WI; December 8-10. University of Kentucky, Lexington, KY.

Status: Abstract Published and Poster Presented

Acknowledgement of Federal Support: YES (Abstract and Poster)

Newsletters:

Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Winter 2021. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 21, Issue 1.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Winter/Spring 2020. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 20, Issue 1.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Summer 2019. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 19, Issue 2.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

On-line Articles:

Lilleboe, D. 2020, November. *Fusarium Head Blight in 2020: Minimal to Modest Impact in Most States*. U.S. Wheat & Barley Scab Initiative. Website: https://scabusa.org/pdfs/USWBSI-Article_2020_FHB-Summary_11-20.pdf.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Lilleboe, D. 2019, November. *Fusarium Head Blight in 2019: Serious Impact in Several States; Minimal to Moderate in Others* USWBSI Survey of Small Grains Specialists Again Affirms That Weather Plays Major Role in Presence/Absence of This Disease. U.S. Wheat & Barley Scab Initiative. Website: https://scabusa.org/pdfs/USWBSI-Article_2019_FHB-Summary_11-18-19.pdf.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

NOTE: All Forum Proceedings, Newsletters and On-Line Articles are available in PDF format on the USWBSI's Website: <https://scabusa.org>.