

USDA-ARS
U.S. Wheat and Barley Scab Initiative
FY18 Performance Report
Due date: July 12, 2019

Cover Page

Principle Investigator (PI):	David Van Sanford
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Fiscal Year:	2018
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.
FY18 USDA-ARS Award Amount:	\$ 189,819
Recipient Organization:	University of Kentucky Research Foundation University Station Lexington, KY 40506-0057
DUNS Number:	939017877
EIN:	61-6033693
Recipient Identifying Number or Account Number:	3200000513
Project/Grant Reporting Period:	4/12/18 - 4/11/19
Reporting Period End Date:	04/11/19

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.	\$ 189,819
	FY18 Total ARS Award Amount	\$ 189,819



Principal Investigator

7/09/19

Date

* MGMT – FHB Management
FST – Food Safety & Toxicology
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

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

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

The main goal of this project is the operation of the headquarters (Networking & Facilitation Office (NFO)) for the U.S. Wheat & Barley Scab Initiative.

This project is directly associated with the following FY18 Projects:

Project Title – Project ID	Principal Investigator	ARS ID/Institution
U.S. Wheat & Barley Scab Initiative's Networking and Facilitation Office, and Website.- FY18-DI-001	Kells, James	59-0206-8-215/Michigan State University

2. What was accomplished under these goals? *Address items 1-4) below for each goal or objective.*

1) major activities

- Hosted the 2018 National Fusarium Head Blight Forum: the NFO working with the Forum Organizing Committee facilitated the USWBSI's annual scientific Forum, which was held in St. Louis, Missouri. Around 214 scientists (including 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, attended the 2018 National FHB Forum. Research results and findings were presented to the forum participants in the form of invited talks (15), Flash & Dash presentations (15) and poster presentations (73) accompanied by abstracts or papers published in the Forum proceedings. One morning was devoted to group discussions designed around the USWBSI's five research areas and three commodity-based coordinated projects. 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.
- Development of the USWBSI's FY19 Research Plan and Budget, which was not approved by USDA-ARS until April, 2019: One-hundred and forty (140) research projects across five (5) research areas (FHB Management, Food Safety & Toxicology, Gene Discovery and Engineering Resistance, and Variety Development and Host Resistance (primarily organized around three regional FHB nurseries)), 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 \$6,268,330 to continue the fight against FHB.

- Resource Management/Accountability Center:
 - *Scabsmart.org Website Redesign:* The site was completely rebuilt from scratch. A custom web app as created for portable devices and a responsive layout design was implemented to accommodate various mobile screen sizes. A scrolling news feed was added to the top of most pages. A new navigation layout was created to make all content accessible with one mouse click from any page on the site.
 - *Setup a Networked Shared Drive with Offsite Cloud Backup Service:* A shared drive was setup on the backup/mail server hosted at Cornell University. This allows local access to all data from anyplace with a network connection. The drive is also backed up nightly to a remote cloud service which can be accessed from any web browser.
 - *Database Redesign and Application Scripts Updated:* The entire Scabusa database was redesigned to accommodate a larger character set used by users. The database engine was also updated due to the site's hosting service provider upgrade. The php (programming language predominately used to run site scripts) engine was also updated by the service provider. Due to all of these changes all of the site scripts had to be updated to work with the new versions and changes.
 - *Scabusa Image Library Redesign:* The image library was redesigned to make better use of the Flickr.com hosting service. The image categories were changed and images were re-categorized. A call for community contributions has been made several times since. Community images have been uploaded and annotated by the site admin. A new front page slide show script was written for the <https://scabusa.org> website to make better use of the new image library system.
 - *Backup/Mail Server Operating System:* The server operating system was due to stop being supported so an update was initiated. The system was upgraded from Ubuntu 14.04 to 16.04 and then finally 18.04. Many of the web, mail, and scripted services had to be reconfigured to work properly with the new operating system. In addition to the upgrade, a cloud email service was purchased and configured to be an offsite failover for the mail service provided by the site's backup/mail service.

2) specific objectives

- i. Maintain and enhance the Resource Management/Accountability Center;
- ii. Facilitate and enhance communication within the Initiative and with its stakeholders;
- iii. Administer the process of developing the Initiative's annual recommended research plan and budget; and
- iv. Manage and implement all meetings and conferences.

3) significant results

Not applicable to this project (non-research based project).

4) key outcomes or other achievements

Objective i.

- Service and site redesigns were intended to enhance the user experience and ease access to the initiative’s community resources. The ScabSmart upgrade in particular has received a great deal of positive feedback.
- The database and script upgrades, also benefited administrative and maintenance processes by preventing errors introduced by hosting service upgrades and the community’s use of a larger character space to enter data into forms. They also allow the services to make better use of current security features and performance enhancements.

Objectives ii-iv. In addition to hosting the 2018 National Fusarium Head Blight Forum and finalization of the FY19 Research Plan & Budget, see Table 1 for a summary of committee meetings, conference calls, research-based workshops and committee nominations/elections.

Table 1. Summary of Meetings, Conference Calls and Workshops/Planning meetings facilitated or supported by the Networking & Facilitation Office (NFO) during FY18.

Committee/Group	# of Meetings/ Conference Calls (CC)/ Nominations	Description/Purpose of Meeting/Nominations
Steering Committee (SC)	2 Meetings	12-04-18: Semi-Annual Meeting – Review and approval of EC’s recommended FY19 Research Plan and Budget. 04-16-19: Semi-Annual Spring Meeting
Executive Committee (EC)	6 Meetings	04-24-18: EC met in Minneapolis since this was the off year when the SC did not hold its spring meeting. <i>(This meeting took place during award period of sister agreement 59-0206-4-001 and 59-0206-8-215)</i> 12-01-18: EC met with review panels to discuss their recommendations; 12-02-18: EC discusses recommendations from review panels, etc. for FY18 Research Plan and Budget (RP&B). 12-03-18: EC finalizes recommendation for FY18 RP&B. 12-04-18: Follow-up of Annual Forum and USWBSI’s FY18 Research Plan and Budget. 04-15-19: EC met in Minneapolis prior to the SC’s meeting on 4/15/19. <i>(This meeting took place during award period of sister agreements 59-0206-4-001 and 59-0206-8-215)</i>

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Committee/Group	# of Meetings/ Conference Calls (CC)/ Nominations	Description/Purpose of Meeting/Nominations
	2 CC	06-27-18: EC finalizes the FY18 Research Plan and Budget with allocation of funding increase. 02-26-19: Review requests for one-time extra funding and finalize the FY19 Research Plan & Budget.
Research-based Planning Meetings	2 Planning Meetings	04-17-19: Barley Coordinated Project Planning Meeting for FY20-21. <i>(This meeting took place during award period of sister agreement 59-0206-4-001 and 59-0206-8-215)</i>
Nominations for Committee Membership; Elections/ Appointments	1 area 2 members 9 RC Committees with a total of 14 vacancies excluding Chair and Vice-Chair appointments	Steering Committee: Barley Pathology (short term replacement due to early resignation by previous representative). Executive Committee – Milling Industry and Winter Wheat Rep Research Committees (RC): Barley CP – 1 member and Chair Durum CP – 1 member and Chair Hard Winter Wheat CP – 1 member and Chair VDHR Spring Wheat CP – 1 member VDHR Northern Soft Winter Wheat CP – 1 member and Chair FHB Management - 3 members and Vice-Chair Food Safety & Toxicology- 3 members and Vice-Chair Gene Discovery & Engineering Resistance – 1 member and Chair/Vice-Chair Pathogen Biology & Genetics – 2 members and Chair/Vice-Chair

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

Undergraduate students are hired to work in the Headquarters branch office at Michigan State University assisting with processing of submitting proposals, organization of the annual forum, and maintain the projects/grants web-based database.

Flash & Dash Presentations/Poster Sessions, 2018 National FHB Forum - 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 is expected to increase the visibility of their research, and attract interest to their poster during the poster session.

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

Information is disseminated through the USWBSI's listservs, website, emails, blogs, press releases and newsletters.

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Training of Next Generation Scientists

Instructions: Please answer the following questions as it pertains to the FY18 award period. 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 FY18 award period?**

N/A

If yes, how many?

2. **Did any graduate students in your research program supported by funding from your USWBSI grant earn their Ph.D. degree during the FY18 award period?**

N/A

If yes, how many?

3. **Have any post docs who worked for you during the FY18 award period and were supported by funding from your USWBSI grant taken faculty positions with universities?**

N/A

If yes, how many?

4. **Have any post docs who worked for you during the FY18 award period and were supported by funding from your USWBSI grant gone on to take positions with private ag-related companies or federal agencies?**

N/A

If yes, how many?

N/A – Not Applicable to this project

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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 FY18 award period. 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.

N/A – Not Applicable to this project

Name of Germplasm/Cultivar	Grain Class	FHB Resistance (S, MS, MR, R, where R represents your most resistant check)	FHB Rating (0-9)	Year Released

Add rows if needed.

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

Abbreviations for Grain Classes

- Barley - BAR
- Durum - DUR
- Hard Red Winter - HRW
- Hard White Winter - HWW
- Hard Red Spring - HRS
- Soft Red Winter - SRW
- Soft White Winter - SWW

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Publications, Conference Papers, and Presentations

Instructions: Refer to the FY18-FPR_Instructions for detailed instructions for listing publications/presentations about your work that resulted from all of the projects included in the FY18 grant. Only include citations for publications submitted or presentations given during your award period (4/12/18 - 4/11/19). If you did not have any publications or presentations, state 'Nothing to Report' directly above the Journal publications section.

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

Conley, E.J., and J.A. Anderson. 2018. Accuracy of Genome-Wide Prediction for Fusarium Head Blight Associated Traits in a Spring Wheat Breeding Program. In: Proceedings of the XXIV International Plant & Animal Genome Conference, San Diego, CA.
Status: Abstract Published and Poster Presented
Acknowledgement of Federal Support: YES (poster), NO (abstract)

Journal publications.

NA

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

Nothing to Report

Other publications, conference papers and presentations.

Forum Proceedings:

Canty, S., B. Wiermer and D. Van Sanford (Eds.). 2018. Proceedings from the 2018 National Fusarium Head Blight Forum, St. Louis, MO; December 2-4. University of Kentucky, Lexington, KY.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Newsletters:

Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Fall 2018. Fusarium Focus. U.S. Wheat & Barley Scab Initiative. Volume 18, Issue 2.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

(Form – PR18)

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Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Winter 2019. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 19, Issue 1.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

On-line Articles

Lilleboe, D. 2018, November. *Fusarium Head Blight in 2018: Serious in Some States; Low Impact in Majority - USWBSI Survey of Small Grains Specialists Again Indicates Weather Plays Key Role in Presence/Absence of This Disease*. U.S. Wheat & Barley Scab Initiative.

Website: https://scabusa.org/pdfs/USWBSI-Article_2018_FHB-Summary_11-8-18.pdf.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

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