

# Dr. Samuel G. McNeill

College of Agriculture, Food and Environment  
Department of Biosystems and Agricultural Engineering  
2019-2021 CV for Annual Performance Review

## Research and Scholarship

### Intellectual Contributions

\* = Senior Author    ~ = Corresponding Author    + = Grad/Prof Student    # = Post Doc    ^ = Undergraduate

WOS = Web of Science JIF = Journal Impact Factor    TC = Journal Total Cites  
SNIP = Source Normalize Impact per Paper    SJR = Scimago Journal Rank

### Published

#### Journal Article, Academic Journal

- + Rod, K. S., Earnest, J., McNeill, S. G., Bradley, C. A., Knott, C. A. (2020). Deoxynivalenol Contamination for Different Wheat Grain Handling Conditions Madison, WI, *Crop, Forage & Turfgrass Management*, 6(e220017), 6. doi: <https://doi.org/10.1002/cft2.20017>  
Scopus Metric Year: 2019 | Category: Agronomy and Crop Science | CiteScore: 0.8 | Highest Percentile: 25 | Rank: #/N: 249/334 | SNIP: 0.475 | SJR: 0.247  
Author Role:  
Dr. Bradley participated in project conceptualization; critically reviewed and revised the manuscript.  
Dr. McNeill provided input in the experimental design and drying tests and reviewed the manuscript.
- Ala, A. A., Otitodun, G. O., Ajao, S. K., Nwaubani, S. I., Opit, G. P., Ogundare, M. O., Braimah, J. A., Busari, G. S., Abel, G. I., Omobowale, M. O., Olenloa, A. E., Ogwumike, J. C., Kolayemi, O. R., McNeill, S. G., Ileleji, K. E. (2020). A comparison of integrated pest management and traditional practices for bagged maize stored in Nigeria, *Journal of Stored Products Research*, 86. doi: 10.1016/j.jspr.2020.101571
- Nwaubani, S. I., Otitodun, G. O., Ajao, S. K., Opit, G. P., Ala, A. A., Omobowale, M. O., Ogwumike, J. C., Abel, G. I., Ogundare, M. O., Braimah, J. A., Gbenga, B. S., Olenloa, A. E., Kolayemi, O. R., McNeill, S. G., Ileleji, K. E. (2020). Assessing efficacies of insect pest management methods for stored bagged maize preservation in storehouses located in Nigerian markets, *Journal of Stored Products Research*, 86. doi: 10.1016/j.jspr.2019.101566
- Turner, A. P., Sama, M. P., McNeill, S., Dvorak, J. S., Mark, T. B., \* Montross, M. D. (2019). A Discrete Event Simulation Model for Analysis of Farm Scale Grain Transportation Systems Oxford, *Computers and Electronics in Agriculture*, 167. doi: 10.1016/j.compag.2019.105040  
WOS Metric Year: 2019 | Category: Agriculture, Multidisciplinary | JIF: 3.858 | Rank by JIF: 5/58 | TC: 11524 | Rank by TC: 4/58  
Scopus Metric Year: 2019 | Category: Horticulture | CiteScore: 6.7 | Highest Percentile: 98 | Rank: #/N: 2/84 | SNIP: 2.207 | SJR: 1.058  
Author Role: Turner: Experiment design, data acquisition, data analysis, methodology, manuscript development and editing  
Sama: Funding acquisition, experiment design, manuscript development and editing  
McNeill: Conceptualization, methodology, writing, review and editing

Dvorak: Conceptualization, methodology, writing - review and editing

Mark: Conceptualization, methodology, writing - review and editing

Montross: Conceptualization, methodology, experiment design, writing - review and editing

Bosomtwe, A., Danso, J. K., Osekre, E. A., Opit, G. P., Mbata, G., Armstrong, P., Arthur, F. H., Campbell, J., Manu, N., McNeill, S. G., Akowuah, J. O. (2019). Effectiveness of the solar biomass hybrid dryer for drying and disinfestation of maize, *Journal of Stored Products Research*, 83, 66-72. doi: 10.1016/j.jspr.2019.05.011

Manu, N., Osekre, E. A., Opit, G. P., Arthur, F. H., Mbata, G., Armstrong, P., Danso, J. K., McNeill, S. G., Campbell, J. (2019). Moisture content, insect pests and mycotoxin levels of maize on farms in Tamale environs in the northern region of Ghana, *Journal of Stored Products Research*, 83, 153-160. doi: 10.1016/j.jspr.2019.05.015

Danso, J. K., Osekre, E. A., Opit, G. P., Arthur, F. H., Campbell, J., Mbata, G., Manu, N., Armstrong, P., McNeill, S. G. (2019). Impact of storage structures on moisture content, insect pests and mycotoxin levels of maize in Ghana, *Journal of Stored Products Research*, 81, 114-120. doi: 10.1016/j.jspr.2018.11.012

Casada, M. E., Thompson, S. A., Armstrong, P. R., McNeill, S. G., Maghirang, R. G., Montross, M. D., Turner, A. P. (2019). Forces on monitoring cables during grain bin filling and emptying St. Joseph, MI, *Applied Engineering in Agriculture*, 35(3), 409-415. doi: 10.13031/aea.13147

Manu, N., Opit, G. P., Osekre, E. A., Arthur, F. H., Mbata, G., Armstrong, P., Danso, J. K., McNeill, S. G., Campbell, J. (2019). Moisture content, insect pest infestation and mycotoxin levels of maize in markets in the northern region of Ghana, *Journal of Stored Products Research*, 80, 10-20. doi: 10.1016/j.jspr.2018.10.007

## Sponsored Projects

### Closed

McNeill S., G., Montross M., D., Overhults D., G., Program Income: Technical Assistance for Energy Audits and Renewable Energy Projects in Rural Kentucky, Sponsored by Rural Development Submitted: April 9, 2019. Funding Dates: March 18, 2019 - September 18, 2020. | Awarded: \$9,350.00

OSPA ID: 201904091141

McNeill S., G., Montross M., D., Overhults D., G., Technical Assistance for Energy Audits and Renewable Energy Projects in Rural Kentucky, Sponsored by Rural Development Submitted: February 15, 2019. Funding Dates: March 18, 2019 - September 18, 2020. | Awarded: \$99,976.00

OSPA ID: 201902151109

Sama M., Dvorak J., S., Mark T., B., McNeill S., G., Montross M., D., Dev. Of A Can-Based Data Management and Decision Support System For Optimal Equipmetn And Harvest Timing From Grain Harvast To Storage, Sponsored by National Institute of Food and Agriculture Submitted: April 3, 2015. Funding Dates: November 1, 2015 - October 31, 2019. | Awarded: \$500,000.00

OSPA ID: 201504031335

McNeill S., G., Alliance for Food Security Through Reduction of Postharvest Loss and Food

Waste, Sponsored by Oklahoma State University Submitted: April 13, 2014. Funding Dates: January 1, 2014 - October 31, 2019. | Awarded: \$65,766.00  
OSPA ID: 201404131437

McNeill S., G., AMPLIFIES Ghana: Assisting Management in the Poultry and Layer Industries by Feed Improvement and Efficiency Strategies in Ghana, Sponsored by Oklahoma State University Submitted: January 13, 2015. Funding Dates: October 1, 2015 - September 30, 2019. | Awarded: \$29,270.00  
OSPA ID: 201501131153

McNeill S., G., Nigeria Capacity Building on Stored Commodities, Sponsored by Foreign Agricultural Service Submitted: October 29, 2014. Funding Dates: December 10, 2014 - September 30, 2019. | Awarded: \$131,207.00  
OSPA ID: 201410291656

McNeill S., G., Montross M., D., Overhults D., G., Program Income: Technical Assistance for Energy Use on Kentucky Farms, Sponsored by Rural Development Submitted: April 14, 2017. Funding Dates: March 29, 2017 - March 31, 2019. | Awarded: \$7,000.00  
OSPA ID: 201704141345

McNeill S., G., Montross M., D., Overhults D., G., Technical Assistance for Energy Use on Kentucky Farms, Sponsored by Rural Development Submitted: March 24, 2017. Funding Dates: March 29, 2017 - March 31, 2019. | Awarded: \$84,395.00  
OSPA ID: 201703240812

#### **Not Funded**

Montross M., D., McNeill S., G., Training the Next Generation of Leaders for a Transforming Grain Industry, Sponsored by Purdue University Submitted: June 5, 2019. | Awarded: \$0.00  
OSPA ID: 201906051429

#### **Active**

Corbin, Kendall, Rodriguez Lopez C., M., McNeill S., G., The Grain or the Microbe? Understanding Wheat Compositional Changes During Storage, Sponsored by Kentucky Small Grain Growers Association Submitted: September 30, 2020. Requested: \$15,098.00, | Awarded: \$15,098.00 OSPA ID: 202009301315

#### **Scope Grants**

##### **Closed**

Overhults D. G., Montross M. D., McNeill S. G., Program Income: Technical Assistance for Energy Audits and Renewable Energy Projects in Rural Kentucky, Sponsored by Rural Development Submitted: January 4, 2018. Funding Dates: March 29, 2017 - March 31, 2019. | Current Budget Amount: \$8,125.00 Prime Grant OSPA ID: 201703240812

#### **Presentations Given**

##### **Invited Speaker**

McNeill S. G., (October 19, 2020). Engineering opportunities to reduce post-harvest losses in Sub-Saharan Africa. BAE 400 class - senior seminar, Biosystems & Agricultural Engineering, Lexington, KY, United States. Invited, University.

McNeill S. G., (November 4, 2019). Engineering opportunities to reduce post-harvest losses in Sub-Saharan Africa. BAE 400 class - senior seminar, Biosystems & Agricultural Engineering, Lexington, KY, United States. Invited, Department.

### **Podium Session**

Ileleji K. E., Omobowale M., Otitodun G., Ala A., McNeill S. G., Opit G., Nwaubani S., (September 19, 2019). Solar Drying of Crops using the Dehytray --Field Studies in Nigeria 2nd All Africa Postharvest Congress and Exhibition, Africa Union, Rockefeller Foundation, UNFAO, World Food Programme, Addis-Ababa, Ethiopia. Accepted, International.

Omobowale M., Ala A., Otitodun G., Nwaubani S., Ileleji K., McNeill S. G., Opit G., (September 18, 2019). Macro- and Micro-climatic influence on maize quality and insect pest management strategies in small market warehouses in Nigeria. 2nd All Africa Postharvest Congress and Exhibition, Africa Union, Rockefeller Foundation, UNFAO, World Food Programme, Addis-Ababa, Ethiopia. Accepted, International.

Omodara M., Montross M. D., McNeill S. G., Sama M., Carr D., (September 17, 2019). Development of a Monitoring System to Access the Internal Environment of Bagged-Grain in Storage 2nd All Africa Postharvest Congress and Exhibition, Africa Union, Rockefeller Foundation, UNFAO, World Food Programme, Addis-Ababa, Ethiopia. Accepted, International.

Overhults D. G., McNeill S. G., Turner A. P., (July 10, 2019). Energy Audits for Dairy and Poultry Facilities in Kentucky 2019 ASABE Annual International Meeting, ASABE, Boston, MA, United States. Accepted, National.

McNeill S. G., Overhults D. G., Montross M. D., (July 10, 2019). Summary of Grain Dryer Audits in Kentucky 2019 ASABE Annual International Meeting, ASABE, Boston, MA, United States. Accepted, National.

Akouwah J. O., Maier D., Opit G. P., Armstrong P. R., Campabadal C., Ambrose K., Obeng-Akrofi G., McNeill S. G., (July 9, 2019). Modeling the Drying Kinetics of Maize in a Solar Biomass Hybrid Dryer 2019 ASABE Annual International Meeting, ASABE, Boston, MA, United States. Accepted, International.

### **Poster Session**

Omodara M., Montross M. D., McNeill S. G., Sama M., Carr D., (July 2019). Development of Monitoring Systems to Access Internal Environment of Bagged-Grain 2019 ASABE Annual International Meeting, American Society of Agricultural and Biological Engineers, Boston, MA, United States. Accepted, International.

Obeng-Akrofi G., Akowuah J. O., Addo A., Maier D., McNeill S. G., (July 9, 2019). Application of Analytic Hierarchy Process (AHP) in the Selection of an Appropriate Biomass Burner Heat Source for Drying Maize in a Crossflow Column Dryer 2019 ASABE Annual International Meeting, ASABE, Boston, MA, United States. Accepted, International.

## Extension

### Extension Publications & Media

\* = Senior Author    ~ = Corresponding Author    + = Grad/Prof Student    # = Post Doc    ^ = Undergraduate

#### **Accepted**

#### **Peer-Reviewed**

#### **Extension Publication- Numbered, Original Content**

\* Knott, C. A., Bradley, C., Grove, J. H., Lee, C. D., Legleiter, T. R., McNeill, S. G., Ritchey, E. L., Villanueva, R. T., Wise, K. Date Accepted: (November, 2020). ID-268P: Kentucky Grain Production at a Glance. University of Kentucky Cooperative Extension Service, 1.

Author Role:

Dr. McNeill provided information on the recommended storage moisture levels for various grains in Kentucky and reviewed the publication.

#### **Extension Presentations Summary**

January 1, 2019 - December 31, 2020.

Description: Grain and hemp drying and storage topics were presented at these in-state meetings. Additional, individual presentations at out-of-state meetings are listed in the section on training programs. | Presentations: 9 | Participants: 263.

## Extension Education & Training Programs

### County Agent In-Service Training

**Invited speaker.** ANR Update on grain drying and storage. (August 25, 2020). Scope:

Multi-county. Counties: 14. Participants: 14 County agents/ specialists.

Description: Grain storage systems and management strategies were presented and discussed, including conventional and temporary storage structures for small quantities and SLAM (and IPM approach for managing stored grain).

**Invited speaker.** Introduction to BAE resources. (April 16, 2020). Scope: State. Counties: 4.

Participants: 4 County agents/ specialists.

Description: Presented an overview of available resources in the BAE Department to new extension agents during their orientation program.

### Field Day Presentation

**Invited speaker.** Pre-harvest Chores for Good Post-harvest Management. (August 27, 2020).  
Scope: Multi-county. Counties: 23. Participants: 93 General public.  
Description: Grain storage systems and management strategies were presented and discussed, including conventional and temporary storage structures for small quantities and SLAM (and IPM approach for managing stored grain).

**Invited speaker.** Maintaining grain quality during storage. (July 23, 2020). Scope: Multi-state.  
States: 4. Participants: 85 General public.  
Description: Grain storage systems and safe management strategies were presented and discussed, including conventional and temporary storage structures, aeration strategies and SLAM (and IPM approach for managing stored grain). This was a virtual meeting, so my presentation was uploaded to their system.

### **Multi-modal Program (describe in description box)**

**Multiple roles (describe in description box).** US-Nigeria Commodity Storage Working Group.  
(January 1, 2018 - Present). Scope: International. Participants: 8 Interest group members.  
Description: Bi-weekly conference calls to plan and discuss project activities.

**Committee member.** Grain packing consortium. (January 1, 2017 - Present). Scope: Multi-state.  
States: 4. Participants: 6 Interest group members.  
Description: Monthly conference calls to plan and discuss project activities.

**Multiple roles (describe in description box).** Annual International Meeting of ASABE. (July 13, 2020 - July 15, 2020). Scope: International. Participants: 32 Other.  
Description: Attend virtual technical sessions on grain drying and storage systems, network with counter-parts in other US states and other countries.

**Multiple roles (describe in description box).** Annual International Meeting of ASABE. (July 7, 2019 - July 10, 2019). Scope: International. Participants: 75 Other.  
Description: Attend technical sessions on grain drying and storage systems, network with counter-parts in other US states and other countries.

### **Other Extension Presentation**

**Facilitator.** Managing Stored Grain. (April 22, 2020). Scope: Multi-state. States: 12. Participants: 366 Industry professionals.  
Description: A one hour webinar was presented by university and industry leaders to discuss grain storage management and included an informative Q & A session.

### **Seminar**

**Invited speaker.** Maintaining grain quality during storage. (September 29, 2020). Scope: Multi-state. States: 2. Participants: 31 General public.  
Description: Grain storage systems and management strategies were presented and

discussed, including conventional and temporary storage structures for small quantities and SLAM (and IPM approach for managing stored grain).

**Invited speaker.** Maintaining grain quality during storage. (August 14, 2020). Scope: Multi-county. Counties: 6. Participants: 75 General public.  
Description: Grain storage systems and management strategies were presented and discussed, including conventional and temporary storage structures for small quantities and SLAM (and IPM approach for managing stored grain).

## Workshop

**Committee member.** Annual Meeting Feed the Future IL for the Reduction of Postharvest Losses. (August 6, 2020). Scope: International. Participants: 38 Interest group members. Description: Network with engineers and other scientists on other teams to evaluate grain drying and storage systems in Bangladesh, Ethiopia, Ghana and Guatemala.

**Multiple roles (describe in description box).** Quarterly Meeting of the AMPLIFIES-Ghana Team. (April 2, 2019 - April 5, 2019). Scope: International. Participants: 17 Interest group members. Description: Provide technical assistance to evaluate different drying and storage systems, network with engineering counter-parts and other scientists in the US and other countries.

## Extension Related Consulting

Non-Governmental Organization (NGO), American Soybean Association - World Initiative for Soy Human Health, Ghana. (October 20, 2019 - October 28, 2019).  
Description: Conducted an assessment of 12 Crop Aggregation Centers (CACs) in Ghana (in the Northern, Brong Ahafo, and Ashanti Regions); inspected each grain storage warehouse and meet with members of the management committee to evaluate current performance and readiness to sustain activities, then provide feedback and recommendations.

Conducted six farm visits (June 10, 2019 - December 10, 2020).  
Description: Provide technical assistance on grain handling, drying, and storage systems to accommodate expansion plans. Four lead to energy audits for handling and/or drying systems for more equipment that is more energy efficient, and two involved layout options for storage bins. The total investment cost for all projects was over \$953,000 (or \$159,000 per farm on average).

Energy audits for four solar PV systems in Kentucky (April 16, 2020 and November 10, 2020).  
Description: Provide technical assistance by conducting energy audits for solar installations in Butler, Christian, Daviess and Meade Counties. The total investment cost for these projects was \$120,800 (or \$30,200 per farm).

## Professional Service

### Committee Member

NC-213, Annual Meetings (in person)., (February 22, 2015 - Present).

American Society of Agricultural and Biological Engineers, Extension (EOPD-208)., (August 1, 2002

- Present).

### **Officer, President/Elect/Past**

NC-213, 2019 Annual Meetings (in person) and quarterly meetings (via phone conference)., (February 28, 2017 - February 28, 2019).Reviewer, Journal Article

ASABE, Review articles for two journals., (January 1, 2019 - December 31, 2020).

Knowledge Based Systems, Review articles this journal., (November 13, 2020 - December 11, 2020).

Cereal Chemistry, Review articles this journal., (November 13, 2020 - December 4, 2020).

### **Extension Media Summary**

Type of Media	Dates	Faculty Member's Role	Description	Evidence of Reach
Press	January 1, 2019 - December 31, 2020	Contributor	I have provided 6 articles on grain harvest management, drying costs and storage management.	UK CAFE News Releases go to 120 county extension offices and local newspapers plus newspapers in neighboring states.
Television	January 1, 2019 - December 31, 2020	Contributor	Recorded 8 programs on WBKO's "Farm and Home" program with Joanna Coles.	WBKO audience is estimated at 20,000+ viewers.

## **Teaching**

### **Theses and Dissertations**

#### **Dissertation Committee Co-Chair**

Michael Omodara, Biosystems & Agricultural Engineering, "ECOSYSTEM OF BAGGED GRAIN STORED UNDER NATURALLY VENTILATED WAREHOUSE: ANALYSIS AND MODELLING," Status: Degree Awarded, Drs. Michael Montross, Samuel McNeill and Ricardo Bessin, Expected Completion Date: May 9, 2020. (August 16, 2017 - December 4, 2020).

#### **Master's Thesis Committee Member**

Kehinde Bababode, Postharvest processing, "Effects of storage on wheat milling quality parameters.," Status: Proposal, Dr. Michael Montross, Dr. Kendall Corbin, Dr. Carlos Rodriguez Lopez. (August 2020 - Present).

Francis Agbali, Biosystems & Agricultural Engineering, "Wind driven grain drying system for Sub-Saharan Africa.," Status: Degree Awarded, Drs. Akinbode Adedeji, Samuel McNeill and Paul Vincelli, Expected Completion Date: May 11, 2019. (August 19, 2015 - August 2019).



## **Service**

### **Department Service**

#### **Committee Chair**

Awards Committee, (January 1, 2019 - December 31, 2020).

#### **Committee Member**

Extension, (August 1, 1979 - Present).

Awards Committee, (January 1, 2018 - December 31, 2019).

### **College Service**

#### **Committee Chair**

Promotion and Tenure Review Committee, (July 1, 2019 - Present).

#### **Committee Member**

Promotion and Tenure Review Committee, (July 1, 2019 - Present).

Hemp Working Group, (January 1, 2019 - Present).

KATS Training Group, (January 1, 2018 - Present).

International Working Group, (January 1, 2012 - Present).

Corn and Soybean Science Group, (January 1, 2004 - Present).

Wheat Science Group, (January 1, 1997 - Present).

### **Professional Service**

#### **Committee Member**

American Society of Agricultural and Biological Engineers, Grain and Feed Processing and Storage (PRS-702), (January 1, 1982 - Present).

## **Professional Development**

### **Professional Memberships**

African Network Group of ASABE. International. (January 1, 2017 - Present).

American Society of Agricultural and Biological Engineers. International. (June 1, 1979 - Present).

Kentucky Association of State Extension Professionals. State. (February 1, 1979 - Present).

Kentucky State Board of Licensure for Professional Engineers and Land Surveyors. State. (January 1, 2001 - June 30, 2020).

### **Awards and Honors**

*Wethington Award*, University of Kentucky. Scholarship/Research/Creative, Wethington Research Excellence Award, University. (May 31, 2020).

*Wethington Award*, University of Kentucky. Scholarship/Research/Creative, Wethington Research Excellence Award, University. (May 31, 2019).

### **Licensures and Certifications**

#### **Licensure**

Professional Engineer, Number: 21820, Kentucky State Board of Licensure for Professional Engineers and Land Surveyors, KY, United States. (July 1, 2020 - June 30, 2022).

Professional Engineer, Number: 21820, Kentucky State Board of Licensure for Professional Engineers and Land Surveyors, KY, United States. (July 1, 2018 - June 30, 2020).