



Integrated Learning Experience: Feed the Future Innovation Lab for Livestock Systems

Fiza Maqsood
Master of Public Health Student
(Nutrition)
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MPH Committee



Dr. Richard Rosenkranz
Professor/Chair
Department of Kinesiology &
Nutrition Sciences
University of Nevada, Las Vegas



Dr. Weiqun Wang
Professor
Department of Food
Nutrition, Dietetics & Health
Kansas State University



Dr. Ellyn Mulcahy
Professor/Program Director
College of Veterinary
Medicine
Kansas State University



Dr. Jennifer Hanson
Professor
Department of Food Nutrition,
Dietetics & Health
Kansas State University



Dr. Sarah McKune

MPH, Ph.D.

Research Associate Professor

Co-Lead, Human Health, Food Safety,
Diets & Nutrition, Innovation Lab for

Livestock Systems

University of Florida



With my preceptor at the College of
Public Health & Health Professions, UF



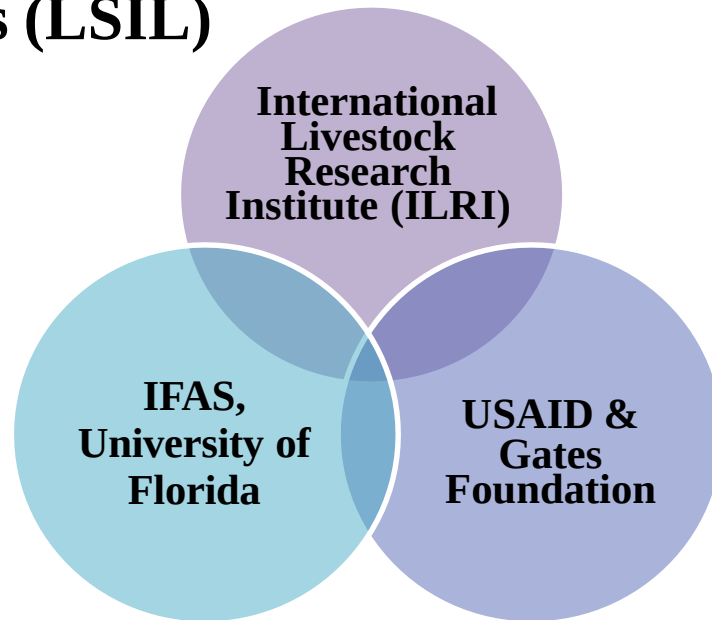
FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Innovation Lab for Livestock Systems (LSIL)

University of Florida, Gainesville

- Research and capacity development efforts
- Livestock productivity & animal-source food consumption
- Improve nutrition, health, and incomes of vulnerable populations



Overall Learning Objectives



Understand global public health research and equitable research partnership with low- and middle-income countries under the scope of LSIL



Analyze the inclusion of LMIC partner country researchers on LSIL publications for continuous monitoring and improvement of research equity



Participate and arrange meetings with principal investigators to understand project management, barriers in a research project in LMICs, and the importance of supporting collaborators to improve research outcomes



Showcase and improve academic writing, literature review, and research presentation skills through various tasks

Experience Activities



Attended meetings of
LSIL and McKune Lab

Collected data and
analyzed
Presented results at the
LSIL faculty meeting
(MPH 701, 754, FNDH 880)

Organized and shadowing
meetings with PIs of
current projects
(FNDH 600, 862, KIN 610)

Made a research
bibliography on Water,
Sanitation, and Hygiene
(WaSH)

(MPH 754, 802, FNDH 844)

Attended U.S.G. Global
Nutrition Coordination
Plan Webinar (Exploring
the anemia etiology)

(FNDH 600, 820, 844)

Participated in reviewing a
paper on nutritional
interventions in Burkina
Faso considering Socio-
Ecological Model (SEM).
(MPH 818, 802, FNDH 844)

Overview of Portfolio Products

- 1 Excel & SPSS Code Book
- 2 White Paper & Presentation
- 3 Meeting Summaries
- 4 WaSH Bibliography

Concern Addressed 1: Research Equity



- Helicopter Science: When researchers from wealthier countries go to a developing country, collect information, travel back to their country, analyze the data and samples, and publish the results with no or little involvement of local researchers.
- One-fifth of all COVID-19-related articles in Africa were authored by foreign researchers.
- Mentoring programs, joint research projects, and support efforts produce an inclusive and varied global scientific community.

STAR Analysis



Situation	Task	Action	Results
1. Capacity Building Increases LMIC first authors 2. Initiation of tools to enhance research equity & capacity building	1. To continue monitoring LMIC authorship details 2. To check progress so far	1. Collected and analyzed data using Excel and SPSS 2. Presented it in LSIL Faculty Meeting 3. Wrote 1st draft of white paper	1. Capacity building communication 2. Results presented in Ethiopia along with the rules and regulations to become an author

Product 1: Excel & SPSS Code Book

The coded data sheet for continuous monitoring of LMIC author inclusion at LSIL addressing variables to determine descriptive statistics and bivariate analysis

	C	D	E	F	G	H	I	J	K	L
	first_auth_affili	country	in_ctry_author	aoi	non_partnr_lm	open_access	doi_url	year	citation	last_author
1	Niger	Niger	Yes	PDM	No	No	10.4314/ijbcs.v15i1.1	2021	1	Niger
2	Ethiopia	Ethiopia	Yes	PDM	No	No	https://doi.org/10.4314/ijbcs.v15i1.2	2023	0	USA
3	USA	Uganda	No	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.3	2019	30	USA
4	USA	Global	No	HFDN	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.4	2020	217	USA
5	USA	LMIC	No	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.5	2020	22	USA
6	Ethiopia	Ethiopia	Yes	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.6	2020	10	UK
7	Belgium	Ethiopia	Yes	MIT	No	No	https://doi.org/10.4314/ijbcs.v15i1.7	2021	10	Ethiopia
8	Niger	Sahel	Yes	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.8	2021	10	USA
9	USA	Ethiopia	No	PDM	No	No	https://doi.org/10.4314/ijbcs.v15i1.9	2022	2	USA
10	Ethiopia	Ethiopia	Yes	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.10	2023	0	USA
11	Burkina Faso	Niger	Yes	MIT	No	No	https://doi.org/10.4314/ijbcs.v15i1.11	2022	0	Ethiopia
12	Ethiopia	Ethiopia	Yes	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.12	2021	7	Ethiopia
13	USA	Kenya	No	HFDN	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.13	2023	0	USA
14	USA	Africa	Yes	PDM	Yes	Yes	https://doi.org/10.4314/ijbcs.v15i1.14	2021	10	USA
15	USA	LMIC	Yes	MIT	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.15	2020	56	USA
16	USA	Africa	Yes	PDM	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.16	2021	10	USA
17	USA	LMIC	Yes	HFDN	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.17	2019	23	USA
18	USA	Africa	Yes	PDM	Yes	Yes	https://doi.org/10.4314/ijbcs.v15i1.18	2022	4	USA
19	USA	Ethiopia	Yes	HFDN	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.19	2020	17	USA
20	USA	Global	No	HFDN	No	Yes	https://doi.org/10.4314/ijbcs.v15i1.20	2021	4	USA
21	Ethiopia	Ethiopia	Yes	PDM	No	No	https://doi.org/10.4314/ijbcs.v15i1.21	2020	2	Ethiopia

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country	Numeric	8	0		{1, Ethiopia}...	None	8	Right	Nominal
in_ctry_author	Numeric	8	0		{1, Yes}...	None	8	Right	Nominal
aoi	Numeric	8	0		{1, PDM}...	None	8	Right	Nominal
non_partner...	Numeric	8	0		{1, Yes}...	None	8	Right	Nominal
open_access	Numeric	8	0		{1, Yes}...	None	8	Right	Nominal

Product 2: White Paper & Presentation

The scientific paper was written on the LMIC author's inclusion in the publications of LSIL



Feed the Future
Innovation Lab for Livestock Systems

Assessment of In-Country Author Inclusion in the Publications of Feed the Future Livestock Innovation Lab

The Innovation Lab for Livestock Systems (LSIL) at Feed the Future develops long-term research and capacity-building initiatives, through multidisciplinary, integrated, and competitively financed applied research. The aim of this synthesis is to analyze the authorship and inclusion of low- and middle-income country (LMIC) partners in publications that have come from LSIL-funded research. The LMIC partners include Burkina Faso, Niger, Nigeria, Ethiopia, Rwanda, Nepal, Cambodia, Kenya, and Uganda. Focusing on these countries, LSIL explores three areas of inquiry (AOI): Markets and Innovation Translation, Production and Disease Management, and Human Health, Food Safety, Diets & Nutrition in its research. LSIL has generated 127 peer-reviewed journal articles as of April 10th, 2023. The enrichment of scientific knowledge through a variety of perspectives and experiences is one of the major advantages of having lower and middle-income researchers write for journals. Researchers from various socioeconomic strata provide original approaches, insights, and contextual knowledge to the research process. Their participation can aid in enlarging the study field, improving the reliability of the results, and advancing the relevance and usefulness of scientific developments in many contexts.

Product 2: White Paper & Presentation

- Presented my results during LSIL faculty meeting on 21st April



Assessment of In-country Authors' Inclusion in Publications

Prepared & Presented by Fiza Maqsood

LSIL Faculty Meeting April 21st, 2023

Feed the Future Innovation Lab for Livestock Systems



BILL & MELINDA
GATES foundation



Product 2: White Paper & Presentation

- On the base of my analysis Dr. Arie Havelaar presented this in Feed the Future meeting in Ethiopia in May.



What does it take to be an author of a peer-reviewed manuscript in research for development?



Prepared by Arie Havelaar on behalf of the Publications Committee, University of Florida

Feed the Future Innovation Lab for Livestock Systems



BILL & MELINDA GATES foundation



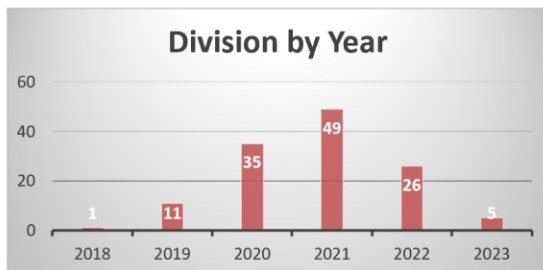
Product 2: White Paper & Presentation



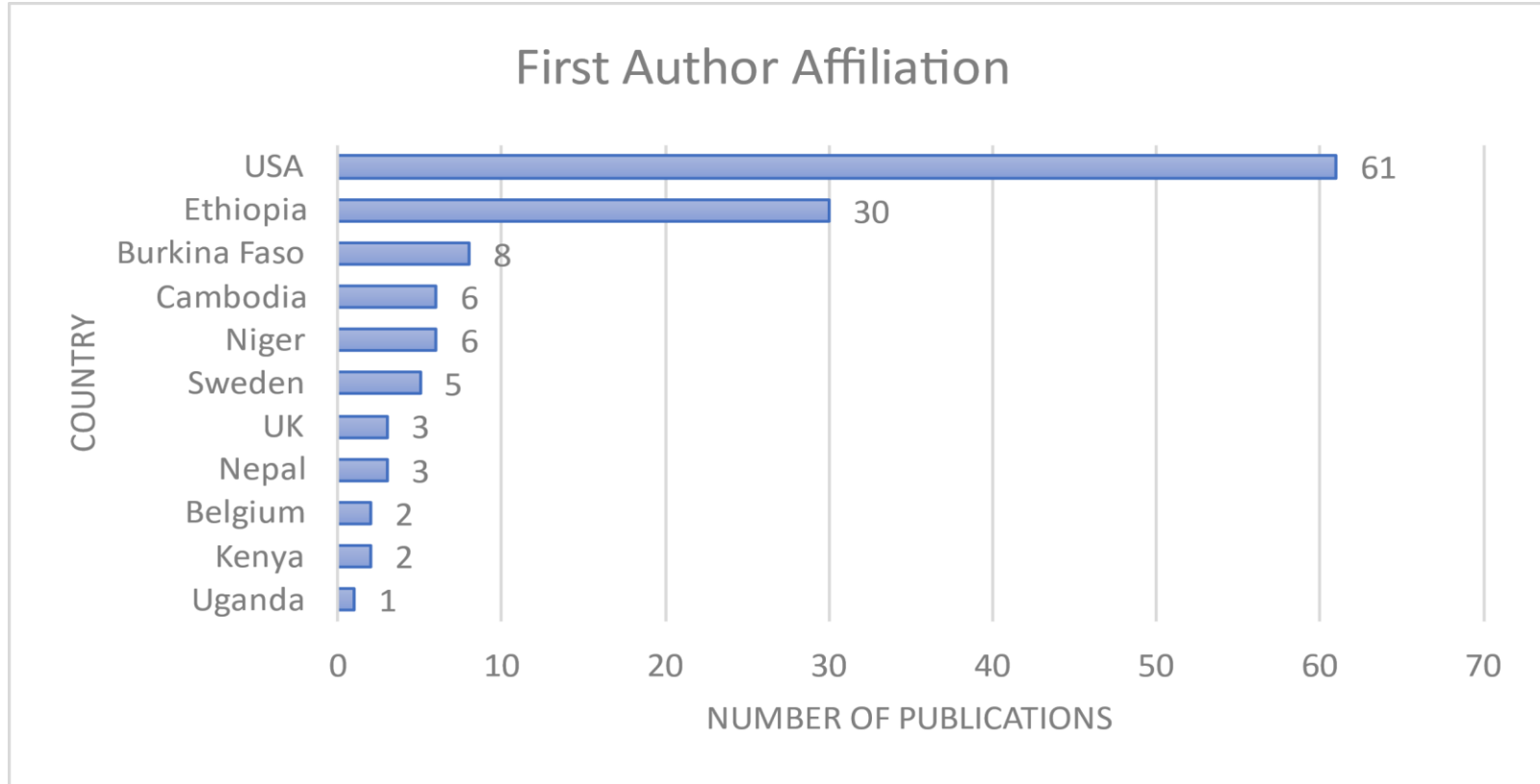
HOW HAS THE INNOVATION LAB DONE SO FAR?

Analysis: Fiza Maqsood

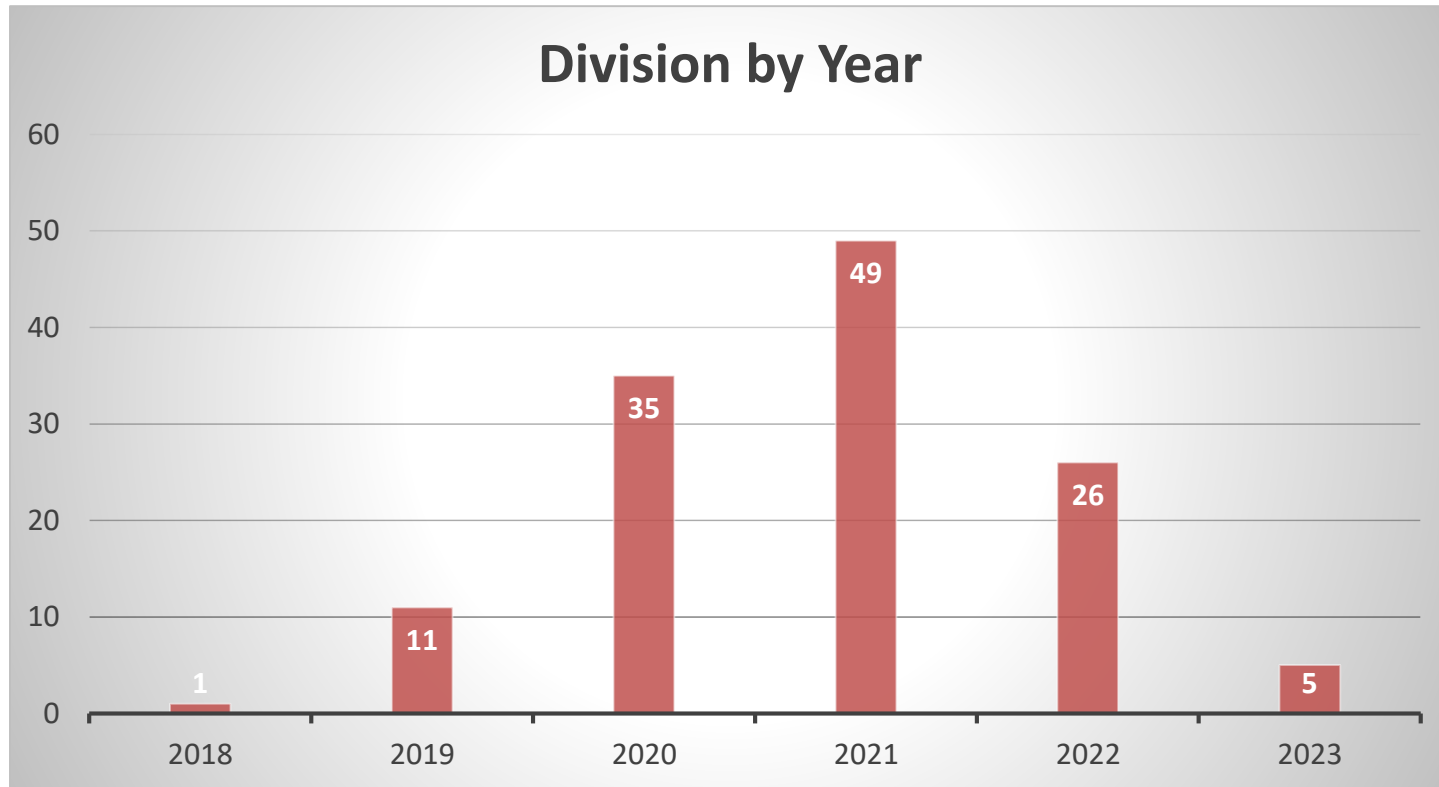
- ✓ 127 peer-reviewed papers per April 10, 2023
- ✓ 89 for target countries, 6 for associate awards, 23 with a broader LMIC focus, 9 with global focus
- ✓ Most papers published on Ethiopia (44), Burkina Faso (14), Cambodia (11), and Rwanda (10)
- ✓ 91 papers (71%) included at least on LMIC author, 56 (44%) had a LMIC first author; 31 (24%) had a LMIC last author
- ✓ 97 papers (76%) were published open access



Results



Results



Concern Addressed 2: Collaborative Partnership



- Local partners possess valuable knowledge about the local context, culture, and challenges.
- Guiding and supporting them in research collaborations allows for the integration of expertise, ensuring that the research is relevant and tailored to the specific needs and conditions of the region.

STAR Analysis

Situation	Task	Action	Results
1. In-country researchers/junior PIs lack training and expertise 2. Guidance causes real-world impact	1. Meetings with Principal investigators 2. Inquire about their progress and hurdles in projects	1. Set up meetings with PIs on Zoom 2. Compile meeting notes and follow-up emails	1. Information exchanged, would enhance nutrition outcomes 2. Great shadowing opportunity to learn about research hurdles in African countries

Product 3: PI Meeting Summaries

Scheduling and post-interview notes on required assistance to principal investigators of current LSIL projects addressing research barriers and nutrition and food safety to improve research outcomes



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The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future

Innovation Lab for Livestock Systems

Name	Project Title & Location	Required Assistance/Follow-up
Michel Dion (PI) Claudia Ganser (Co-PI)	POULTRY LOSSES AND ONE HEALTH (POLOH): Reducing losses and zoonotic risks along the poultry value chain through a One Health approach Burkina Faso, Centre Nord	1. Claudia/Michel will share the survey to solicit feedback from Drs. McKune & Havelaar on indicators of diarrhea, proximity to animals, and nutrition 2. Michel Dion will follow up with Dr. McKune if he wants access to IDRC-developed Gender and Intersectionality Transformative Approaches to improved poultry production or the Un Oeuf flipbook 3. Dr. Havelaar will connect Michel Dion with Roy Curtis at the Vet school at UF 4. Claudia/Michael will share lab protocols 5. Dr. McKune will share the CAGED survey
Felicia Wu (PI)	Aflatoxin M1 Health Risks vs. Benefits of Dairy Consumption in Ethiopian Children: An Epidemiological Trial and Risk-Benefit Analysis Ethiopia; Region Southern Nations, Nationalities, and Peoples (SNNP) (Zones Gurage and Hadiya)	1. Dr. Wu will check survey validation with the team considering the fasting practices of the target population. 2. Dr. Wu will follow up with Dr. McKune regarding gender analysis outcomes - if gender differences exist, we can consider a follow-up qualitative study 3. Dr. Wu can connect with Mulu to further discuss her project 4. Dr. McKune will share the WEAI R code
Andrew Stringer (PI) (Andy)	Improving smallholder poultry production and egg consumption in children under two in Ethiopia Ethiopia, Misrak Shewa Zone	1. Dr. Stringer looks to learn from the CAGED project and assessment of animal ownership-associated risks and safety. 2. In data collection, Dr. Stringer is recommended to consider hand sanitation before eating, handling food, and feeding a child. 3. Further discussion at IP meeting with Dr. Arie in May 2023
Bhola Shankar Shrestha (PI)	Integrated approach to enhance milk quality, dairy animal productivity and milk consumption by vulnerable household members in rural Nepal Rural Nepal	1. Project needs support to enhance effective data collection for objectives 2 and 3 2. Follow-up meeting in the presence of Dr. Havelaar, Dr. De Vries, and Dr. Laurie Miller would be helpful to identify missing pieces and fulfilling the objective of this meeting. 3. Mr. Shrestha is responsible for objective 1 and it does not require any assistance for now.

Concern Addressed 3: Water, Sanitation & Hygiene



**Ensure availability
and sustainable
management of water
and sanitation for all**

- Lack of hygiene encourages infections and reduces the quality of life.
- 2 billion people lack access to safely managed drinking water
- 3.6 billion people, nearly half the world's population, do not have access to safely managed sanitation
- 2.3 billion people lack basic hygiene services, including soap and water at home.

STAR Analysis : WaSH



Situation	Task	Action	Results
1. WaSH conditions need improvement in LMICs	1. Collection of preliminary data to write a grant to USAID	1. Systematic research on PubMed using Advanced research tools	1. Grant in progress for the event to be conducted in Fall 2024
2. Need of international platforms for sustainable solutions	2. Research bibliography on interventional studies on WaSH in last five years	2. Summaries of those research papers	

Product 4: WaSH Bibliography



A research bibliography addressing interventions of WaSH to improve nutrition outcomes in lower-income and middle-income countries to gather preliminary data from the last five years to write a grant to USAID on WaSH

WaSH Bibliography

Chard AN, [Garn JV](#), [Chang HH](#), [Clasen T](#), [Freeman MC](#). Impact of a school-based water, sanitation, and hygiene intervention on school absence, diarrhea, respiratory infection, and soil-transmitted helminths: results from the WASH HELPS cluster-randomized trial. *J Glob Health*. 2019 Dec;9(2):020402. doi: [10.7189/jogh.09.020402](#). PMID: 31360445; PMCID: PMC6657003.

The intervention targeted primary schools and involved the provision of improved water, sanitation, and hygiene facilities and practices. The researchers evaluated the impact of the intervention on school absence, diarrhea, respiratory infection, and soil-transmitted helminth (STH) infections. The study collected data from 65 primary schools in Nyanza Province, Kenya. The findings of the study indicated that the WASH intervention had a significant positive effect on reducing school absences. The intervention was associated with a 25% reduction in student absenteeism. However, the study did not find significant reductions in the prevalence of

MPH Foundational Competency Attainment

Competency 2

Select quantitative and qualitative data collection methods appropriate for a given public health context.

Applied a quantitative data collection method to extract data from a primary source to identify the inclusion of authors in LSIL publications

MPH Foundational Competency Attainment

Competency 3

Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate.

Used Microsoft Excel and SPSS to code and analyze the data to identify descriptive statistics on author inclusivity and equity in LSIL publications.

MPH Foundational Competency Attainment

Competency 4

Interpret results of data analysis for public health research, policy, or practice.

Data results were interpreted mainly using descriptive statistics and bivariate analysis for LMIC author inclusion.

MPH Foundational Competency Attainment

Competency 7

Assess population needs, assets and capacities that affect communities' health

The identification of interventions that address population needs and capacities in terms of hygiene, food safety, and nutrition in LMICs.

MPH Foundational Competency Attainment

Competency 13

Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes.

The strengthening of partnerships through mid-project discussions with principal investigators to enhance public health intervention strategies and nutrition outcomes in African countries.

MPH Foundational Competency Attainment

Competency 16

Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making

Communicating and conducting interview calls with principal investigators and discussing their hurdles to applying interventions in African countries and then following up with the assistance they required

MPH Foundational Competency Attainment

Competency 19	Communicate audience-appropriate public health content, both in writing and through oral presentation.
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The presentation of the white paper in the form of a presentation at the LSIL faculty meeting. The presentation was catered according to the audience.

MPH Emphasis Area Competency Attainment

Number and Competency		Description
1	Information literacy of public health nutrition	Inform public health practice through analysis of evidence-based policy, systems, and environmental change.
2	Compare and relate research into practice	Examine chronic disease surveillance, policy, program planning and evaluation, and program management, in the context of public health nutrition.
3	Population-based health administration	Critically examine population-based nutrition programs.
4	Analysis of human nutrition principles	Examine epidemiological concepts of human nutrition in order to improve population health and reduce disease risk.
5	Analysis of nutrition epidemiology	Describe criteria for validity in nutritional epidemiological methodology.

Acknowledgements



Kansas State University Graduate School

Major Professor and Graduate Committee Members

MPH Office

Family and Friends

Preceptors

Dr. Sarah McKune

Dr. Arie Havelaar

Thank you!



Questions?