

A. COVER PAGE

Project Title: 2020 North American Agricultural Safety Summit	
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Reporting Period: 08/01/2021 - 07/31/2022	Requested Budget Period: 08/01/2021 - 07/31/2022
Report Term Frequency: Final	Date Submitted: 10/26/2022
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Human Subjects: NA	Vertebrate Animals: NA
hESC: No	Inventions/Patents: Not Applicable

B. ACCOMPLISHMENTS

B.1 WHAT ARE THE MAJOR GOALS OF THE PROJECT?

The overall Goal of the North American Agricultural Safety Summit series is to create and sustain a culture of safety that establishes evidence-based interventions and initiatives addressing the primary causes of disease, disability and death associated with agricultural work. The Summit events will forge collaborations between agriculture (ag) industry and farm organization leaders with occupational safety and health practitioners, researchers and advocates.

Specific Aims are to:

1. Plan, execute and conduct follow-up activities for a series of annual Summit events that include participation from influential agricultural leaders, safety practitioners, researchers, policy makers, and others.
2. Facilitate public-private partnerships that build a culture of safety, leading to adoption of best agricultural safety practices in pace with the changing landscape of food production practices and worker profiles.
3. Identify research priorities for NIOSH agricultural research centers based upon industry's current safety/health issues and anticipated future needs.
4. Publish proceedings, commentaries, and research studies in a dedicated issue of the Journal of Agromedicine: Practice, Policy & Research.

B.1.a Have the major goals changed since the initial competing award or previous report?

No

B.2 WHAT WAS ACCOMPLISHED UNDER THESE GOALS?

File Uploaded : B2 Accomplishments.pdf

B.3 COMPETITIVE REVISIONS/ADMINISTRATIVE SUPPLEMENTS

For this reporting period, is there one or more Revision/Supplement associated with this award for which reporting is required?

No

B.4 WHAT OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT HAS THE PROJECT PROVIDED?

File Uploaded : B4 Opportunity for Training and Professional Development.pdf

B.5 HOW HAVE THE RESULTS BEEN DISSEMINATED TO COMMUNITIES OF INTEREST?

This series of three North American Agricultural Safety Summits (2020 and 2021 were virtual; while 2022 was in-person) provided opportunities for agricultural safety and health professionals and agricultural business and farm organization representatives to exchange information on relevant research, best practices and unsolved problems. Following each event there were media reports on key topics, published abstracts, a conference report and individual published research results. The Agricultural Safety and Health Council of America (ASHCA) website (www.ashca.org) continues to house the abstracts and general information from each of the events.

B.6 WHAT DO YOU PLAN TO DO DURING THE NEXT REPORTING PERIOD TO ACCOMPLISH THE GOALS?

Not Applicable

B.2. Accomplishments

Over the three-year conference grant cycle all four aims were accomplished to some extent. However, due to the COVID-19 pandemic several accommodations had to be made because of the CDC-recommended restrictions on in-person events and the intermittent compromised health of individuals associated with the planned activities. Leaders of the Agricultural Safety and Health Council of America (ASHCA) were generally pleased with the results of the Summits and appreciated the financial support afforded through the CDC Conference Support grant.

Major accomplishments are described below for each objective here:

1. *Plan, execute and conduct follow-up activities for a series of annual Summit events that include participation from influential agricultural leaders, safety practitioners, researchers, policy makers, and others.*

The first (March, 2020) Summit was well planned and we anticipated an attendance of more than 120 individuals. However, three weeks prior to the Las Vegas event, the CDC issued its most severe COVID-19 recommendations for personal safety and restricted traveling. Thus, the planned March event was cancelled in February and registrants received a full refund. In June a webinar featured the research lightning talks and in August 2020 a webinar featured the safety awards ceremony.

For the second (March, 2021) Summit, COVID-19 restrictions continued to plague in-person events and by late 2020 the planned Las Vegas Summit was modified to be an online event, with similar programming to the scheduled in-person event. With more than 100 registered online attendees, the event was held over two days via an online Zoom portal, managed by the event coordinator. Speakers gave their presentations, there were pre-videotaped research lightning talks, and the awards ceremony was split over two days.

An in-person Summit conference was planned and successfully executed for the third (March, 2022) North American Agricultural Safety Summit. The venue was Bally's of Las Vegas (because the original contract was held/extended). The COVID-19 pandemic was a concern throughout the planning process and certainly impacted the attendance with much lower attendance than forecasted.

An evaluation process was included across the three-year period. This included written feedback from attendees and verbal input from the event planning team.

Key points from the 2022 in-person event included:

- The Summit consisted of 11 main presentations along with 9 lightning talks, 6 award presentations, 34 posters, 34 abstracts to be printed in the *Journal of Agromedicine*, and 6 exhibitors.
- 84 individuals attended the 2022 Summit.
- Overall rating for the conference was 8.85 out of 10 ($sd = 1.04$, range 5-10 with 10 = Excellent Event), with the most common scoring of 9 (68% of respondents rated the conference a 9 or 10).. This was an increased (improved) overall rating from previous evaluation results (2010, 2013, 2021).

- Facilitated potential partnerships with new collaborators had the highest mean score of the conference outcomes (this was the lowest mean score outcome from the 2021 Virtual Summit) - 4.52 out of 5 ($sd = 0.57$; 1 = Poor to 5 = Excellent.)

The eight-page Evaluation Summary from the 2022 Summit is attached with this FINAL RPPR.

2. *Facilitate public-private partnerships that build a culture of safety, leading to adoption of best agricultural safety practices in pace with the changing landscape of food production practices and worker profiles.*

Over the period of the two virtual and one in-person Summit events there was an emphasis on building public-private partnerships. From the perspective of industry/agriculture leaders, the research lightning talks and research awards were very insightful. The biannual ASHCA AgSharpe safety training (with certificate) events convened in various locations where they added an emphasis on evidence-based research and evaluated interventions. Several academic partners attended and/or presented at AgSharpe trainings. From the academic perspective, the opportunity to learn about industry priorities and strategies was valuable. This was particularly the case in learning how commodity groups and farm organizations galvanized to share information on compliance with pandemic-related safety guidelines, strategies for housing and transportation, and other issues such as handling medical conditions in the workplace. Very importantly, a strong collaboration continues as a result of the Summits. The National Occupational Research Agenda (NORA) Agriculture, Forestry and Fishing sector council is now co-chaired by Jennifer Lincoln, PhD of NIOSH and Jess McCluer, the ASHCA Board Chair and executive for the National Grain and Feed Assn. in Washington D.C. That collaboration continues to this day.

3. *Identify research priorities for NIOSH agricultural research centers based upon industry's current safety/health issues and anticipated future needs.*

This objective was not addressed as a standalone activity but was handled in less formal ways. Through the NORA AgFF sector council there have been a series of web-based conversations that have highlighted agricultural conditions warranting further research. At the same time, the newly adopted strategic plan for ASHCA created one of its four pillars named: "Research to Practice to Research." The sub-aims are to increase communications and interactions between agricultural industry/businesses and academic partners, and to increase likelihood that federal research dollars are targeted at the most pressing ag safety and health issues.

4. *Publish proceedings, commentaries, and research studies in a dedicated issue of the Journal of Agromedicine: Practice, Policy & Research.*

This objective was successfully completed with published abstracts and a conference summary from 2021. The summary from 2022 is planned as a larger manuscript with highlights of the 15 year history of ASHCA. Details of Journal of Agromedicine publications include: The total number of published research abstracts was: 2020 - 41 abstracts; 2021 - 26 abstracts; 2022 – 34 abstracts.

Thus, there were 101 total published abstracts with individual authors under these sections.

- Lee BC. (2020) Introduction, Journal of Agromedicine, 25:3, 231-231, DOI: 10.1080/1059924X.2020.1771049
- Heiberger S. (2021) Abstracts from the Virtual 2021 North American Agricultural Safety Summit, Journal of Agromedicine, 26:3, 294-312, DOI: 10.1080/1059924X.2021.1930723
- Heiberger S. (2022) 2022 North American Agricultural Safety Summit: A New Day for Safety - Conference Abstracts, Journal of Agromedicine, 27:4, 419-441, DOI: 10.1080/1059924X.2022.2112419

Published conference summaries

- Lee BC, Hair DM, McCluer J, Murphy DJ & Swenson AVR. (2021) Highlights of the Virtual 2021 North American Agricultural Safety Summit, Journal of Agromedicine, 26:3, 289-293, DOI: 10.1080/1059924X.2021.1931607

In addition to published research abstracts and conference highlights, many scientists and academic partners who attended the Summit events continue to publish their research results in the *Journal of Agromedicine*.

In summary, the conference planning team was very pleased with the North American Agricultural Safety Summit series. Although the events were compromised by the COVID-19 pandemic, the impact of the planning and conduction of events yielded positive results and the stated aims were successfully achieved. Furthermore, the collaborations have led to continued conversations with the potential of planning a major, international agricultural safety and health event in 2024.

B.4 Opportunity for Training and Professional Development

This CDC conference support grant provided funds for three North American Agricultural Safety Summit events – 2020, 2021 and 2022. The COVID-19 pandemic forced the first two in-person events to become virtual, online presentations, research talks and exhibits, including “Tools of the Trade” demonstrations. The focus addressed multiple aspects of agricultural safety and health. Topics included:

- Lessons learned from COVID-19 impact on large and small farm operations
- Future of ag labor and worker sustainability
- Emerging technologies and impacts on worker safety
- Communicating safety to motivate best practices
- Extreme weather impacts on workers' mental and physical health
- Dealing with marijuana and opioids at work
- Feedlots and pork production facilities safety
- Working parents and childcare issues
- Rural mental health
- Company-based policies and protocols
- Unique challenges of migrant and immigrant workers
- Impact of finances on mental health

There were no formal academic training sessions that offered credits or Continuing Education Units. All activities would be deemed professional development.

In addition to the presentations, panels and lightning talks, the poster sessions and receptions allowed for conversation on relevant topics and, oftentimes, led to subsequent collaboration on research and outreach.

In the first year, zoom sessions allowed for lightning talks over two time-frames. The number of attendees ranged from 45 – 60 individuals. In 2021, there were 14 main stage presentations (on line), 17 lightning talks, 7 award presentations, 12 posters and 18 Tools of the Trade demonstrations. A total of 119 individuals registered and attended sessions. Year three (2022) finally allowed for an in-person event. The program included 11 main presentations, 9 lightning talks, 6 awards, 30 posters (published later), and 8 exhibitors. A total of 84 individuals attended in-person in Las Vegas. Evaluation forms were completed by 63 (75%) of attendees and indicated that networking and the ability to identify potential partnerships were highlights of the event.

C. PRODUCTS

C.1 PUBLICATIONS

Are there publications or manuscripts accepted for publication in a journal or other publication (e.g., book, one-time publication, monograph) during the reporting period resulting directly from this award?

No

C.2 WEBSITE(S) OR OTHER INTERNET SITE(S)

Category	Explanation
Other	www.ashca.org

C.3 TECHNOLOGIES OR TECHNIQUES

Not Applicable

C.4 INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES

Not Applicable

C.5 OTHER PRODUCTS AND RESOURCE SHARING

NOTHING TO REPORT

D. PARTICIPANTS

D.1 WHAT INDIVIDUALS HAVE WORKED ON THE PROJECT?

Commons ID	S/K	Name	Degree(s)	Role	Cal	Aca	Sum	Foreign Org	Country	SS
LEEBARB	Y	LEE, BARBARA C	RN,PHD	PD/PI	0.1	0.0	0.0			NA
ASWENSON	N	Swenson, Andrea	BS,MS,PHD	Evaluator	0.2	0.0	0.0			NA

Glossary of acronyms:

S/K - Senior/Key

Cal - Person Months (Calendar)

Aca - Person Months (Academic)

Sum - Person Months (Summer)

Foreign Org - Foreign Organization Affiliation

SS - Supplement Support

RS - Reentry Supplement

DS - Diversity Supplement

OT - Other

NA - Not Applicable

D.2 PERSONNEL UPDATES

D.2.a Level of Effort

Not Applicable

D.2.b New Senior/Key Personnel

Not Applicable

D.2.c Changes in Other Support

Not Applicable

D.2.d New Other Significant Contributors

Not Applicable

D.2.e Multi-PI (MPI) Leadership Plan

Not Applicable

E. IMPACT

E.1 WHAT IS THE IMPACT ON THE DEVELOPMENT OF HUMAN RESOURCES?

This CDC conference support grant provided funds for three North American Agricultural Safety Summit events – 2020, 2021 and 2022. The COVID-19 pandemic forced the first two in-person events to become virtual, online presentations, research talks and exhibits, including “Tools of the Trade” demonstrations. The focus addressed multiple aspects of agricultural safety and health. Attendees represented researchers (mostly from NIOSH-funded agricultural centers), educators, non-profit farm safety organization representatives, agricultural business leaders, farm organization representatives, and agricultural risk managers working for various large enterprises.

Topics included:

- Lessons learned from COVID-19 impact on large and small farm operations
- Future of ag labor and worker sustainability
- Emerging technologies and impacts on worker safety
- Communicating safety to motivate best practices
- Extreme weather impacts on workers' mental and physical health
- Dealing with marijuana and opioids at work
- Feedlots and pork production facilities safety
- Working parents and childcare issues
- Rural mental health
- Company-based policies and protocols
- Unique challenges of migrant and immigrant workers
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In the first year, zoom sessions allowed for lightning talks over two time-frames. The number of attendees ranged from 45 – 60 individuals. In 2021, there were 14 main stage presentations (on line), 17 lightning talks, 7 award presentations, 12 posters and 18 Tools of the Trade demonstrations. A total of 119 individuals registered and attended sessions. Year three (2022) finally allowed for an in-person event. The program included 11 main presentations, 9 lightning talks, 6 awards, 30 posters (published later), and 8 exhibitors. A total of 84 individuals attended in-person in Las Vegas. Evaluation forms were completed by 63 (75%) of attendees and indicated that networking and the ability to identify potential partnerships were highlights of the event.

A major impact of this grant was the collaboration between ASHCA leaders, the NIOSH Agricultural Program Leader and leaders of the NIOSH agricultural centers. As a result, the National Occupational Research Agenda (NORA) Agriculture, Forestry and Fishing sector council has been re-energized and the co-leaders are Jennifer Lincoln, PhD of NIOSH with Jess McCluer of the National Grain and Feed Association of Washington, D.C.

E.2 WHAT IS THE IMPACT ON PHYSICAL, INSTITUTIONAL, OR INFORMATION RESOURCES THAT FORM INFRASTRUCTURE?

Not Applicable

E.3 WHAT IS THE IMPACT ON TECHNOLOGY TRANSFER?

Not Applicable

E.4 WHAT DOLLAR AMOUNT OF THE AWARD'S BUDGET IS BEING SPENT IN FOREIGN COUNTRY(IES)?

NOTHING TO REPORT

G. SPECIAL REPORTING REQUIREMENTS SPECIAL REPORTING REQUIREMENTS**G.1 SPECIAL NOTICE OF AWARD TERMS AND FUNDING OPPORTUNITIES ANNOUNCEMENT REPORTING REQUIREMENTS**

NOTHING TO REPORT

G.2 RESPONSIBLE CONDUCT OF RESEARCH

NOTHING TO REPORT

G.3 MENTOR'S REPORT OR SPONSOR COMMENTS

Not Applicable

G.4 HUMAN SUBJECTS**G.4.a Does the project involve human subjects?**

NA

G.4.b Inclusion Enrollment Data

NOTHING TO REPORT

G.4.c ClinicalTrials.gov

Does this project include one or more applicable clinical trials that must be registered in ClinicalTrials.gov under FDAAA?

G.5 HUMAN SUBJECTS EDUCATION REQUIREMENT

Are there personnel on this project who are newly involved in the design or conduct of human subjects research?

G.6 HUMAN EMBRYONIC STEM CELLS (HESCS)

Does this project involve human embryonic stem cells (only hESC lines listed as approved in the NIH Registry may be used in NIH funded research)?

No

G.7 VERTEBRATE ANIMALS

Does this project involve vertebrate animals?

G.8 PROJECT/PERFORMANCE SITES Not Applicable
G.9 FOREIGN COMPONENT No foreign component
G.10 ESTIMATED UNOBLIGATED BALANCE G.10.a Is it anticipated that an estimated unobligated balance (including prior year carryover) will be greater than 25% of the current year's total approved budget?
G.11 PROGRAM INCOME Is program income anticipated during the next budget period?
G.12 F&A COSTS Is there a change in performance sites that will affect F&A costs?

I. OUTCOMES

I.1 What were the outcomes of the award?

Over the three-year conference grant cycle all four aims were accomplished. However, due to the COVID-19 pandemic several accommodations had to be made because of the CDC-recommended restrictions on in-person events and the intermittent compromised health of individuals associated with the planned activities. Leaders of the Agricultural Safety and Health Council of America (ASHCA) were generally pleased with the results of the Summits and appreciated the financial support afforded through the CDC Conference Support grant.

A major outcome is the strong interest in expanding this agricultural safety and health event, with a proposed International Conference on Agricultural Safety and Health with multiple organizations collaborating, to be held in 2024 or 2025.