The 2019 Western Agriculture Safety and Health – Cultivating Collaborations conference offers a forum to build collaborative relationships and foster the exchange of ideas. Our program addresses forward thinking research for the safety and health of the western agricultural workforce, including farming, fishing and forestry. Sessions focus on hired/contract workers, climate change, animal/human one-health, injury and exposure prevention, prevention through design, and research to practice. We invite lightning talk and poster presenters.


Cultivating Collaborations is co-sponsored by the five western NIOSH Agricultural Centers, the NIOSH Western States Division, and participation is invited from all partners in the implementation of science, service and policy.

SCHEDULE

THEMATIC SESSIONS

Day 1, 8/7

SESSION I. Hired and Contract Ag Workforce – Sustainable Solutions

SESSION II. Prevention through Design in New Technologies

Day 2, 8/8

SESSION III. Western Climate Change and Amplified AgFF Worker Health Risks

SESSION IV. Surveillance of AgFF Injury, Illness and Economic Impacts

SESSION V. Animal Agriculture and the One Health Approach

SESSION VI. Forestry – Integrating Safety in a Time of Rapid Change

Day 3, 8/9

SESSION VII. Best Practices in Engagement and Research to Practice (r2p)

SESSION VIII. Occupational Health Research in the Commercial Fishing Industry
## SCHEDULE

**Tue. 8/6**
Open Pre-conference Meeting: Dairy Consortium Meeting (sponsored by HICAHS)

### Day 1, Wednesday 8/7

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00 - 1:00</td>
<td>Registration and Poster Set-up</td>
</tr>
<tr>
<td>1:00 - 1:10</td>
<td>Welcome, Mike Yost, Director Pacific Northwest Agricultural Safety &amp; Health Center</td>
</tr>
<tr>
<td>1:10 - 1:40</td>
<td>Richard Fenske, Keynote: Beyond a Doubt: The critical role of science in workplace health and safety</td>
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<tr>
<td>1:45 - 2:15</td>
<td>Marc Schenker, Keynote: Hired and Contract Ag Workforce-Sustainable Solutions</td>
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<tr>
<td>2:15 - 2:30</td>
<td>Break</td>
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<tr>
<td>2:30 - 4:45</td>
<td>Concurrent Sessions: SESSION I: Ag Workers / SESSION II: Prevention through Design</td>
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<tr>
<td>4:45 – 5:00</td>
<td>Break</td>
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<tr>
<td>5:00</td>
<td>EVENING RECEPTION – Small bites dinner at 5pm &amp; Music at 6:30pm</td>
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<tr>
<td>5:15 – 6:15</td>
<td>Lightning Talks</td>
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<tr>
<td>6:30 – 8:30</td>
<td>Poster Session (Stand-by posters 6:30 – 7:30)</td>
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### Day 2, Thursday 8/8

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00</td>
<td>Doors Open &amp; Roundtable Sign-up</td>
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<tr>
<td>8:30 – 10:45</td>
<td>Concurrent Sessions: SESSION III: Climate Impacts / SESSION IV: Surveillance</td>
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<tr>
<td>10:45</td>
<td>Introduction to Roundtable Discussion Format and Topics</td>
</tr>
<tr>
<td>11:00 – 11:15</td>
<td>Break &amp; Roundtable Sign-up</td>
</tr>
<tr>
<td>12:15 – 1:30</td>
<td>LUNCH on your own (See recommendations list)</td>
</tr>
<tr>
<td>1:30 – 3:45</td>
<td>Concurrent Sessions: SESSION V: Animal Ag / SESSION VI: Forestry</td>
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<tr>
<td>3:45 – 4:00</td>
<td>Break</td>
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<tr>
<td>4:00 – 5:00</td>
<td>Lightning Talks</td>
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<tr>
<td>5:00 - 6:30</td>
<td>Poster Session (no-host bar)</td>
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<td>DINNER on your own (See recommendations list)</td>
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### Day 3, Friday 8/9

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<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00</td>
<td>Doors Open &amp; Roundtable Sign-up</td>
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<tr>
<td>8:30 – 10:45</td>
<td>Concurrent Sessions: SESSION VII: Research to Practice / SESSION VIII: Fishing</td>
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<tr>
<td>10:45 – 11:00</td>
<td>Break</td>
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<tr>
<td>11:00 – 12:00</td>
<td>Roundtable Discussions - 10 breakout roundtables - 12 people ea.</td>
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<tr>
<td>12:00 – 1:30</td>
<td>LUNCHEON</td>
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<td>Awards</td>
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<td></td>
<td>Jeannie Nigam, NIOSH-sponsored Keynote: Stress, Mental Health, and Total Worker Health in AgFF. Introduction by Brad Husberg, AgFF Program, NIOSH</td>
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SESSION I.

Hired and Contract Ag Workforce – Sustainable Solutions
Chair: Marc Schenker, MD, MPH, University of California Davis, WCAHS

Vulnerable and underserved populations make up a substantial majority of the agricultural workforce in the West. These workers are at great risk of occupational injury and poor health outcomes. All of the NIOSH Ag Centers have considerable research and outreach activities that aim to reduce these adverse outcomes. With this in mind, the goal of the Hired and Contract Ag Workforce session is threefold: 1) to enhance collaborations of people working on common challenges, both research and outreach, of improving health and safety among hired and contract agricultural workers; 2) to share knowledge of unique approaches appropriate for improving the health of hired and contract agricultural workers; and 3) to learn about effective approaches to addressing sensitive health issues such as sexual harassment and mental health among vulnerable workers. In addition to presentations from Ag Center members on their research activities, a panel will discuss the translation of research to practice at the community level.

Introduction - Marc Schenker, MD, MPH

- Engagement through Promotores de Salud
  Mary Jo Ybarra-Vega, MS, LMHC, Outreach/Behavioral Health Coordinator,
  Moses Lake/Quincy Community Health Center
- Mental and Physical Health of Immigrant Workers in CAFOs and Field Ag
  Athena Ramos, PhD, CS-CASH, University of Nebraska Medical Center
- Occupational Health and Safety of U.S. Farmworkers in the High Plains
  Anita Pena, PhD, HICAHS, Colorado State University
- Diversity within the Forestry and Logging Workforce
  Vanessa Casanova, PhD, SW Ag Center, University of Texas
- Panel: Sustainable Models of Research and Translation to Improve Farmworker Health.
  Moderator: Xóchitl Castañeda, Health Initiative of the Americas, at the School of Public Health, University of California Berkeley

Panelists composed of previous speakers

SESSION II.

Prevention through Design in New Technologies
Chair: Aaron Yoder, PhD, MS, CS-CASH, & Chandran Achutan, MS, PhD, University of Nebraska

This session will discuss the usability and feasibility of new injury prevention technologies that have been or are in the process of being developed and implemented. Presenters will provide information on current and emerging issues that may be addressed by new technologies; methods of engaging agricultural workers to use new technologies; innovative testing methods; the use of feedback protocols; and collection of quantitative and qualitative performance measures. The presentations will be followed by a panel discussion composed of the speakers.

Introduction - Brad Husberg, Director, CDC/NIOSH

- Pesticide Safety - PestiSeguro/PestiSafe
  Kit Galvin, MS, CIH, PNASH, University of Washington
- New Pesticide Application Technologies
  Eddie Kasner, PhD, PNASH, University of Washington
- Design Solutions for Prevention of Musculoskeletal Disorders in Ag
  Fadi Fatallah, PhD, and Victor Duraj, WCAHS, University of California Davis
- Evaluation of Foldable ROPS Universal Lift-assist Design
  Paul Ayers, PhD, HICAHS, Colorado State University
- ATV Crush Protection Devices
  Farzaneh Khorsandi, PhD, University of California Davis
- Robotics and AI in Agriculture: Innovations and Safety & Health Needs
  Karen Lewis, MS, Washington State University
SESSION III.
Western Climate Change and Amplified AgFF Worker Health Risks
Chairs: Richard Fenske, PhD, PNASH, Univ. of Washington and Kent Pinkerton, WCAHS, Univ. of California Davis

Climate change brings with it increased risk of catastrophic wildfires, flooding, drought, and sea level rise as well as extreme heat days, which will become more frequent, resulting in increased air pollution, changes in vector-borne diseases, as well as the impact of heat itself. Climate change encompasses all aspects of agriculture from planting to harvesting, crop rotation, crop types and growing season. Near-term and long-term consequences of climate change on worker health will be explored in this session, as well as ideas for active solutions. This session will focus on the following goals: 1) examine current challenges in occupational health and safety related to extreme heat, changes in air pollution and increases in vector-borne diseases; 2) evaluate the consequences of climate projections on future occupational health hazards; outline next steps in regard to education regarding climate change in the Western United States.

Introduction - Richard Fenske, PhD and Kent Pinkerton, PhD

- Climate Impacts on Human Health and Adaptation Strategies
  Heidi Kroop, MS, PhD, Climate Impacts Group, University of Washington
- Heat Stress in Agricultural Workers: Traumatic injury risk and future considerations
  June Spector, MD, PNASH, University of Washington
- Heat Stress among California Farm Workers
  Marc Schenker, MD, WCAHS, University of California Davis
- Assessing Heat Effects among Migrant and Seasonal Farmworkers: a multi-state study
  Kai Zhang, PhD, SW Ag Ctr, Health Science Center at Houston, University of Texas
- Health Hazards Associated with Drought
  Jesse Bell, PhD, CS-CASH, University of Nebraska Medical Center
- Panel: Air pollution from Wildfires and its Impact on Agricultural Workers
  Coralynn Sack, MD, DEOHS & Department of Medicine, University of Washington
  June Spector, MD, PNASH, University of Washington
  Roger Ottmar, PhD, USDA Forest Service Pacific Northwest Research Station, Seattle WA
  Kent Pinkerton, PhD, WCAHS, University of California Davis

SESSION IV.
Surveillance of AgFF Injury, Illness and Economic Impacts
Chair: Risto Rautiainen, PhD, MS, CS-CASH, University of Nebraska

Surveillance involves ongoing systematic collection, analysis, and interpretation of health data and timely dissemination of the findings to those who need to know. Understanding the changing nature of farming, populations at risk, exposures, risk factors, and characteristics of injuries is essential for successful prevention. Surveillance of farm-related injuries and illnesses is challenging, however. There is no single system that identifies these incidents comprehensively. The large number, small size, and geographic dispersal of farm operations, and the diversity of the populations at risk pose challenges. The goal of this panel is to discuss strategies to develop sustainable, cost-effective systems for the surveillance of injuries and illnesses in agriculture. The panelists will discuss innovative methods including analyses of ‘big and small data’ from existing administrative databases, automated online surveys, and media tracking services.

- Monitoring Agricultural Injuries from Media Reports
  Bryan Weichelt, PhD, MBA, National Farm Medicine Center
- Analyses of Agricultural Injury Data from Administrative Databases
  Erika Scott, PhD, Northeast Center for Occupational Health and Safety
- Injury and Illness Surveys to Self-employed Farmers and Ranchers
  Risto Rautiainen, PhD, MS, University of Nebraska Medical Center
- Improving Fatality Surveillance for the US fishing industry
  Samantha Case, MPH, NIOSH Western States Division
- Bureau of Labor Statistics Injury Surveillance
  Marika Litras, PhD, US Bureau of Labor Statistics
- Migrant and Seasonal Farmworker Enumeration Methodology
  Alice Larson, PhD, Larson Assistance Services
- Panel: Smart Surveillance – Developing sustainable, cost-effective systems for the surveillance of injury and illness in agriculture. Panelists composed of previous speakers
SESSION V.
Animal Agriculture and the One Health Approach
Chair: David Douphrate, PhD, MPT, MBA, CPE, CSP, University of Texas, School of Public Health

One Health is the integrative effort of multiple disciplines to attain optimal health for people, animals, and the environment. The One Health concept recognizes that human health is connected to the health of both animals and the environment. Within the One Health framework, livestock operation productivity and efficiency involves a triad of interactions between the animal, equipment and environment, and worker. To date, research emphasis has been placed on the animal or production practices, with very little research attention placed on the worker, and his/her interaction with the animal or environment. This session will address how worker health research is implemented within a One Health framework.

- A One Health Model for Dairy Farming- Feasible and Scalable?
  Peter Rabinowitz, MD MPH, PNASH, University of Washington
- The One Health Paradigm: Challenges and Opportunities for Developing Successful Interventions to Improve Poultry and Human Health
  Matthew W. Nonnenmann, PhD, CIH, Great Plains Center for Agricultural Health, University of Iowa,
- One Health: Why We Care® in the Swine Industry
  Heather Fowler, VMD, PhD, National Pork Board
- Panel: Worker Health in a One Health Framework.
  Panelists composed of previous speakers (and Bison representative)
- Panel: Addressing Worker and Livestock Safety During Livestock Handling Activities
  Elaine Austin, PhD, PNASH University of Washington
  Robert Hagevoort, PhD, SW Center for Ag Health, Injury Prevention and Education, New Mexico State University

SESSION VI.
Forestry – Integrating Safety in a Time of Rapid Change
Chair: Marcy Harrington, MPA, Public Affairs, PNASH, University of Washington

There is an upswing in demand for forest products and land management that occupational health and forest management professionals need to be prepared to address. These trends are driven by the threat of wildfire and expanded demand for US timber. The forestry sector relies on a small and largely unskilled workforce in need for training, technology, and management solutions, especially in a time of rapid change. Currently transforming the West is a new logging technology - winch-assisted steep slope logging. This is opening up the West’s steep slopes to harvesting and presents new safety challenges. In forestry services (forest maintenance), immigrant Latino workers conduct high hazard, intense manual labor tasks. This industry of small subcontractors is underserved and hidden from the regulatory eye and the workforce at high risk for injury and work abuses.

New Technologies Transforming Logging
  - Winch-assisted Machine Logging on Steep Slopes
    John Garland, PE, PNASH, University of Washington
  - Mechanized Planting in the Southwest
    Vanessa Cassanova, PhD, SW Center for Ag Health, Injury Prevention and Education, Univ. of Texas at Tyler
  - GPS and Location Services for Situational Awareness
    Rob Keefe, PhD, University of Idaho

Workforce Development Needs in the Forestry Sector
  - NW Logger Needs Assessment and Coming Industry Initiatives
    John Garland, PE, PNASH, University of Washington
  - Mixed-methods analysis of logging injuries in MT and ID
    John Rosecrance, PhD, HICAHS, Colorado State University
  - Logging Machine Operators, Health and Safety Training
    David Douphrate, SW Center for Ag Health, Injury Prevention and Education, University of Texas at Tyler

Panel: Immigrant Latino Workforces in Forestry Services
Carl Wilmsen, PhD, Executive Director, Norwest Forest Worker Center
Vanessa Casanova, PhD, SW Center for Ag Health, Injury Prevention and Education, University of Texas at Tyler
Arnold (Butch) de Castro, PhD, PNASH, University of Washington
SESSION VII.

Best Practices in Engagement and Research to Practice (r2p)
Chair: Amanda Wickman, MBA, Univ. of Texas at Tyler, Southwest Center for Ag Health, Injury Prevention and Education

This session will feature proven techniques for research and outreach that not only reach but also engage AgFF populations. Presenters from the western United States will share best practices for engaging partners and workers in agriculture, forestry and fishing sectors through safety and health outreach and research. Successful research to practice approaches will be described. A panel of experts will conclude the session by discussing what they ‘like’ and ‘dislike’ about social media as an engagement tool.

- Latino Farmworker Health Outcomes: Engaging Youth and Families in Research and Prevention
  Michael Merten, PhD, Southwest Center for Ag Health, Injury Prevention and Education, University of Texas at Tyler

- Partnering with AgriBusiness Leaders to Raise the National Agri-Safety Culture
  Barb Lee, PhD, National Children's Center for Rural and Agricultural Health and Safety, University of California Davis

- Research to Practice – CHIPS Project: Incorporating results into education
  Teresa Andrews, MS, Western Center for Agricultural Health and Safety, University of California Davis

- Panel: Community-Engaged Research Methods with the Yakima Farmworker Community
  Elizabeth Torrez, BS, El Proyecto Bienestar (The Well Being Project), University of Washington
  Ester Min, PhD(c), Asthma Research and the Home Air Pediatric Intervention (HAPI), University of Washington
  Orly VanDerGeest, MS, Water Quality, Nitrates and Community Messaging, University of Washington

- Panel: Best Practices for Using Social Media to Connect with AgFF Stakeholders
  Whitney Pennington, MPH, HICAHS, Colorado State University
  Nykole Vance, MS, CEP, CHES, SW Center for Agricultural Health, Injury Prevention and Education, University of Texas Health Science Center at Tyler
  Ellen Duysen, MPH, Central States Center for Agricultural Safety and Health, University of Nebraska Medical Center

SESSION VIII.

Occupational Health Research in the Commercial Fishing Industry
Chair: Jennifer Lincoln, PhD, NIOSH Western States Division, University of Washington

The commercial fishing industry is recognized as one of the most hazardous work settings. Many operations are characterized by strenuous labor, long work hours, harsh weather, and moving decks with hazardous machinery and equipment. To date, NIOSH scientists and others have published regional and fishery-specific analyses of fatalities and traumatic injuries, and made recommendations to prevent them. Little research has examined occupational health-related issues in the US commercial fishing industry, such as chronic and infectious disease, fatigue, musculoskeletal injuries/illnesses, and thermal load from PPE. This session will highlight researchers’ recent efforts to better understand such health issues.

- Occupational Health Studies in Commercial Fishing and Offshore Seafood Processing Industries
  - Impact of Thermal Load on PFD Use Among Shrimp Fishermen
    Ann Carruth, DNP, RN, Southeastern Louisiana University
  - Chronic Health Risks in Commercial Fishermen: A cross-sectional analysis from a small rural fishing village in Alaska
    Debra Cherry, MD, MPH, PNASH, University of Washington
  - Fatigue and Sleep Deprivation: A review of the commercial fishing literature
    Jennifer M. Lincoln, PhD, CSP, NIOSH Western States Division
  - Linking data sources to explore chronic health conditions, infectious disease, and musculoskeletal injury/illness among Alaskan fishermen
    Laura Syron, PhD, MPH, NIOSH Western States Division
  - Health-related Results from the Fishermen Led Injury Prevention Program
    Laurel Kincl, PhD, CSP, Oregon State University

- Participatory Research Methods to Engage Fishing Industry Stakeholders
  - Interviewing Corporate Safety and Health Managers to Understand Seafood Companies’ Challenges and Successes
    Laura Syron, PhD, MPH, NIOSH Western States Division
  - Fishermen Led Injury Prevention Program: An example of community-based participatory research
    Laurel Kincl, PhD, CSP, PNASH, Oregon State University
Wednesday Sessions: August 7th

**Dairy Safety Kit: A Washington State Focused Dairy Training Solution**
Elena Austin, ScD, University of Washington

**Evaluation of Wearable-Based Activity Recognition Modeling Applications for Logging Safety**
Eloise Zimbelman, Graduate Research Assistant, University of Idaho

**Wearable Sensors to Assess Trunk Position in a Sample of Forestry Workers**
Federica Masci, Department of Health Sciences of University of Milan and International Centre for Rural Health of the Santi Paolo e Carlo ASST of Milan, Milano, Italy

**Timber Faller Safety on Integrated Mechanized Operations in Steep Terrain**
Francisca Belart, Assistant Professor, Oregon State University

**Strategies for Building Relationships with Study Partners and Participants in Washington Agricultural Communities**
Pablo Palmandez, MS, University of Washington

**ATV Aware: An All-Terrain Vehicle Research and Safety Program**
Susan Harris-Broomfield, Educator - Rural Health, Wellness, and Safety, University of Nebraska - Lincoln extension

**Youth and All-Terrain Vehicles in the Agricultural Industry**
Guilherme de Moura Araújo, Graduate Student, University of California, Davis

**Crush Protection Devices for Agricultural All-Terrain Vehicles**
Farzaneh Khorsandi, PhD, University of California, Davis

**National ROPS Rebate Program (NRRP)**
Paul Ayers, Professor, University of Tennessee

**Interactive Education and Motion Graphics to Deliver Ag Health and Safety Programs**
Carolyn Sheridan, BSN, Ag Health and Safety Alliance Founder, President

**Tribal Bison Workers –Imminent Dangers, Surveillance and Practical Solutions**
Ellen Duyser, MPH, COHC, University of Nebraska Medical Center, College of Public Health, Central States Center for Agricultural Safety and Health

**NIOSH Ag Centers Partner on “Telling the Story” project**
Scott Heiberger MS, Upper Midwest Agricultural Safety and Health Center/National Farm Medicine Center

Thursday Session: August 8th

**Feasibility of Heat Acclimatization in Wildland Firefighters**
Evan Johnson, PhD, University of Wyoming

**Gene Expression of Peripheral Blood Mononuclear Cells during Heat Acclimation in Firefighter**
Emily Schmitt, PhD, University of Wyoming
Wildfire Respirator Information Project
Whitney Pennington, MPH, Colorado State University

International Agriculture Health and Safety Standardized Survey Results for Gear up for Ag College Students
David Sullivan, Adv. Dip FBM, Program Director, Ag Health and Safety Alliance

Understanding Children Farm Safety Needs of Latino Farmworkers/Farmers in the Pacific Northwest
Maria Tchong-French, MPH, University of Washington

Injury and Severity in Greenhouse and Nursery Workers: Can Data Drive Prevention through Engineering Design?
Katherine Schofield, PhD, CSP, University of Minnesota Duluth

Contribution Analysis: Measuring Behavior and Workplace Change
Sharon Newbill, PhD Folkstone: Evaluation Anthropology

Academia, Extension, and Communities Use Theater to Change the Health and Safety of Farm Families
Deborah B Reed, PhD, MSPH, RN University of Kentucky

Application of a Social Network Analysis to Assess Connectedness within the Agricultural Community
Cheryl Beseler, PhD, Colorado State University

Home Grown: Rural Nurses Trained to Serve Farmers and Ranchers
Natalie Roy, MPH, Executive Director, AgriSafe Network

HEALWA: Authoritative Information for Washington Healthcare Providers
Patricia Devine, MLS, Community Outreach Coordinator, HEALWA Program

Preparing for Emerging Agricultural Health Threats
Natalie Roy, MPH, Executive Director, AgriSafe Network
1. **The Healthy Dairy Worker Study**  
Presenter: *José Carmona, MPH, University of Washington  
Co-author: Peter Rabinowitz, MD, MPH

Presenter: Elena Austin, ScD, University of Washington  
Co-authors: Amber Adams-Progar, PhD, Pablo Palmânde, MS, Scott Dilley, MATS, Michael Yost, PhD

3. **Carriage of MRSA among Dairy Farm Workers in the High Plains Region**  
Presenter: *Jessica Nuñez, Masters Candidate, Colorado State University  
Co-authors: Stephen Reynolds, PhD, CIH, Bledar Bisha, PhD, Joshua Schaeffer, PhD, CIH

Presenter: Brandy Foust, BS, Washington State University  
Co-authors: Elena Austin, ScD, Pablo Palmânde, MS, Michael Yost, PhD, Amber Adams-Progar, PhD

5. **Hygienic Intervention and Its Effect on Nasal Inflammation and Microbiome in Dairy Workers**  
Presenter: *Grant Erlandson, MS, Colorado State University,  
Co-authors: Josh Schaeffer, PhD CIH, Stephen Reynolds, PhD CIH, Sheryl Magzamen, PhD, Ken Jones, PhD, Matthew Nonnenmann, PhD CIH, Julia Sharp, PhD

6. **Culturally Congruent Training Program on Infectious and Zoonotic Disease Prevention for Latinx Dairy Workers**  
Presenter: I. Noa Román-Muniz, DVM, MS, Colorado State University  
Co-authors: Kayla Rink, MS, Lauren Menger, PhD, Lorann Stallones, MPH, PhD, Pablo Pinedo, John Rosecrance, PhD, Flor Amaya-Soto, MV

**FISHING**

7. **Modern Day Alaskeros: Filipinos Working in Fish Processing at Dutch Harbor, AK**  
Presenter: Gabriel Garcia, PhD, University of Alaska, Anchorage  
Co-author: Butch de Castro, PhD

8. **Perceptions of Safety and What Makes a Good Crew in the Dungeness Crab Fleet**  
Presenter: Laurel Kincl, PhD, CSP, Oregon State University (OSU)  
Co-authors: Hayley Strenke, MPH, Kendall Dunlap, Amelia Vaughan, MLIS, Kaety Jacobson, MS

Presenter: Jasmine Nahorniak, MS, Oregon State University  
Co-authors: Viktor Bovbjerg, PhD, Sabrina Pillai, MPH, Samantha Case, MPH, Laurel Kincl, PhD, CSP

10. **Evaluation of PFDs by Vietnamese Commercial Fishermen in the Gulf of Mexico**  
Presenter: Ann Carruth, DNS, RN Southeastern Louisiana University  
Co-authors: Jeff Levin, MD, DrPH, Julie Sorensen, PhD, Jennifer Lincoln, PhD
11. **Dangers in the Woods: Root Causes Peligros en el Bosque: Causes Raíces**  
Presenter: Carl Wilsen, PhD, Northwest Forest Worker Center  
*Co-author: Butch de Castro, PhD, Diane Bush, MPH, Marcy Harrington, MPA*

**FORESTRY**

12. **Intent to Adopt Location Sharing for Logging Safety Applications**  
Presenter: *Ann Wempe, MSc, University of Idaho*  
*Co-authors: Rob Keefe, PhD, Soren Newman, PhD, Travis Paveglio, PhD*

13. **Evaluation of Wearable-Based Activity Recognition Modeling Applications for Logging Safety**  
Presenter: *Eloise Zimbelman; Graduate Research Assistant; University of Idaho*  
*Co-author: Rob Keefe, Associate Professor and Director*

14. **Wearable Sensors to Assess Trunk Position in a Sample of Forestry Workers**  
Presenter: Federica Masci, Department of Health Sciences of University of Milan and International Centre for Rural Health of the Santi Paolo e Carlo ASST of Milan, Milano, Italy  
*Co-authors: Giovanna Spatari, MD, Carmelo Mario Giorgianni, PhD, John Rosecrance, PhD*

15. **Timber Faller Safety on Integrated Mechanized Operations in Steep Terrain**  
Presenter: Francisca Belart, PhD, Assistant Professor, Oregon State University  
*Co-author: Viktor Bovbjerg, PhD*

16. **Feasibility of Heat Acclimatization in Wildland Firefighters**  
Presenter: Evan Johnson, PhD, Assistant Professor, University of Wyoming  
*Co-authors: Miranda Zamora, ATC, Joshua Loseke, CSCS, Carly Hibbs, Emily Schmitt, PhD, Tucker Readdy, PhD, Derek Smith, PhD*

17. **Gene Expression of Peripheral Blood Mononuclear Cells during Heat Acclimation in Firefighters**  
Presenter: Emily Schmitt, PhD, University of Wyoming  
*Co-authors: Evan Johnson, PhD, Miranda Zamora, ATC, Carly Hibbs, Joshua Loseke, CSCS, Derek Smith, PhD*

**FARMING: Machinery**

18. **ATV Aware: An All-Terrain Vehicle Research and Safety Program**  
Presenter: Susan Harris-Broomfield, Educator, University of Nebraska - Lincoln Extension  
*Co-authors: Erin Howard, BS, Tracy Dethlefs, RN*

19. **Youth and All-Terrain Vehicles in the Agricultural Industry**  
Presenter: *Guilherme de Moura Araújo, Graduate Student, University of California, Davis*  
*Co-authors: Farzaneh Khorsandii, PhD*

20. **Crush Protection Devices for Agricultural All-Terrain Vehicles**  
Presenter: Farzaneh Khorsandii, PhD, University of California, Davis  
*Co-authors: Hsiao-Yang Chou, Graduate Student, Eric Fong, Intern, Paul D. Ayers, PhD, Fadi Fathallah, PhD*

21. **National ROPS Rebate Program (NRRP)**  
Presenter: Paul Ayers, PhD, Professor, University of Tennessee

22. **Evaluation of Mechanical and Robotic Strawberry Harvest-Aids**  
Presenter: Fadi Fathallah, PhD, University of California, Davis  
*Co-author: Vicente Munguia, MS, Stavros Vougioukas, PhD, Victor Duraj, BS*
23. **Gut Microbiome Profiles for Agricultural Workers Exposed to Exertional Heat, Dehydration, and Agricultural Pesticides**
Presenter: Vicki Stover Hertzberg, PhD, Emory University
Co-authors: Valerie Mac, PhD, FNP-C, Dana B. Barr, PhD, Cynthia Striley, PhD, Jennifer Mulle, PhD, Malú Tansey, PhD, Linda McCauley, PhD

24. **Knowledge, Beliefs and Practices of Midwestern Women Working in Agriculture Regarding Heat Stress**
Presenter: *Jill Oatman, MPH Student, University of Nebraska
Co-authors: Ellen Duysen, MPH, COHC, Semi Lee, MPH, Lea Pounds, PhD, MBA, Terry Stentz, PhD, MPH, CPE, CPC, Aaron Yoder, PhD

25. **Smoke, Wind, Rain: Extreme Weather Events and Occupational Safety in Agriculture**
Presenter: Heather Riden, MA, WCAHS, UC Davis
Co-authors: Gail Wadsworth, Teresa Andrews, MS, Rebeca Giacinto, PhD, Julie Rainwater, PhD, Kent Pinkerton, PhD

26. **Farmworkers’ Perceptions on Wildfire Smoke**
Presenter: *Idanis Cruz, BA Public Health-Global Health, University of Washington

27. **Wildfire Respirator Information Project**
Presenter: Whitney Pennington, MPH, Colorado State University
Co-authors: Peter Kolb, PhD, Kristin Pintauro, PhD, Joshua Scott, PhD, Joshua Schaeffer, PhD, Lorann Stallones, PhD, Stephen Reynolds, PhD, Marilee Long, PhD, John Volckens, PhD

28. **Construction of a Recirculating Aerosol Wind Tunnel for Evaluating Particulate Deposition in the Nasal Airway**
Presenter: Joemy Ramsay, MS, University of Utah
Co-authors: Darrah Sleeth, PhD, MPH CIH

29. **Understanding Airborne Particulate Pollution in Imperial Valley, California**
Presenter: *Savannah Mack, PhD Candidate, University of California, Davis
Co-authors: Keith Bein, PhD, Qi Zhang, PhD, Kent Pinkerton, PhD

30. **International Agriculture Health and Safety Standardized Survey Results for Gear up for Ag College Students**
Presenter: David Sullivan, Adv. Dip FBM, Program Director, Ag Health and Safety Alliance
Co-authors: Carolyn Sheridan, RN BSN

31. **Understanding Children Farm Safety Needs of Latino Farmworkers/Farmers in the Pacific Northwest**
Presenter: Maria Tchong-French, MPH, University of Washington
Co-authors: Marcy Harrington, MPA

32. **International Collaboration to Improve Safety Culture and Risk Management among Vulnerable Populations in Agriculture**
Presenter: Athena Ramos, PhD, MBA, MS, CPM, University of Nebraska Medical Center
Co-authors: Laura Girdžiūtė, PhD, Helle Birk Domino, MSc, SEGES P/S, Claudia Cordovil, PhD, Jože Starič, PhD, MSc, DVM, Adrianus de Rooij, MD, Jarkko Leppälä, PhD

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33. Leveraging Crash Data for Injury Surveillance in the Southwest Agricultural Region
Presenter: Eva Shipp, PhD, Texas A&M Transportation Institute-Center for Transportation Safety,
Co-authors: Amber Trueblood, DrPH, Hye-Chung Kum, PhD, Tanya Garcia, PhD, Shubhangi Vasudeo, MPH, Jisung Kim, Data Scientist, Marcelina Perez, MS

34. Agricultural Injuries in the Central States Region: Summary of 2011-2015 Data
Presenter: *Anthony Johnson Jr, MS, University of Nebraska
Co-authors: Kelsie Musil, MS, MPH, Ellen Duysen, MPH, Risto Rautiainen, PhD

35. Adoptability of Orchard Ladders with Shorter Rung Spacing
Presenter: Victor Duraj, BS, Western Center for Agricultural Safety and Health, University of California at Davis
Co-authors: Tyler Hunter, BS, Fadi Fathallah, PhD

36. Recognizing and Reducing Safety Hazards in Northwest Potato Production
Presenter: *Rachel Phinney, Graduate Student, Boise State University
Co-authors: Cynthia Curl, PhD, Karin Adams, PhD, Matthew Blua, PhD

37. Hazard Mapping: A Tool to Identify Health & Safety Hazards in Agriculture
Presenter: Isabel Flores Garcia, BSHA, Western Center for Agricultural Health and Safety, University of California, Davis,
Co-authors: Heather Riden, MA

38. Biochemical and Physiological Dynamics in Ligament Injury & Healing
Presenter: *Amjad Ramahi, MS, PhD Student, University of California Davis
Co-authors: Fadi Fathallah, PhD, Tom Jue PhD

39. Injury and Severity in Greenhouse and Nursery Workers: Can Data Drive Prevention through Engineering Design?
Presenter: Katherine Schofield, PhD, CSP, University of Minnesota, Duluth
Co-author: Abigail Clarke-Sather, PhD

40. Personal Protective Equipment Use among Farmers in Nebraska, Latvia, Lithuania, and Slovenia
Presenter: Chandran Achutan, PhD, CIH, University of Nebraska
Co-authors: Kaspars Kampuss, PhD, Laura Girdziūtė, PhD, Kaunas, Lithuania, Gediminas Vasiliauskas, PhD, Jože Starič, DVM, Risto Rautiainen, PhD

41. Improving the Job Satisfaction of Agricultural Workers to Build a More Sustainable Workforce
Presenter: Malcolm Hobbs, PhD, UC Cooperative Extension, Napa, University of California Davis
Co-authors: Monica Cooper, PhD

42. Contribution Analysis: Measuring Behavior and Workplace Change
Presenter: Sharon L. Newbill, PhD, Folkstone: Evaluation Anthropology
Co-authors: Amanda Wickman, MBA

43. Sexual Harassment Prevention in Agriculture: Evaluating a Tailored and Multilevel Worksite Intervention in Washington State
Presenter: *Dennise Drury, MPH student, Pacific Northwest Agricultural Safety and Health Center
Co-authors: Elizabeth Torres, BS, Michael Yost, PhD, Victoria Breckwich-Vasquez, DrPH, Jody Early, PhD
44. **Interactive Education and Motion Graphics to Deliver Ag Health and Safety Programs**  
Presenter: Carolyn Sheridan, RN, Ag Health and Safety Alliance Founder and President  
*Co-authors: David Sullivan, Adv. Dip FBM, Program Director, Ag Health and Safety Alliance*

45. **Academia, Extension, and Communities Use Theater to Change the Health and Safety of Farm Families**  
Presenter: Deborah Reed, PhD, MSPH, RN, University of Kentucky  
*Co-authors: Deborah Claunch, BBA, Debra McCallum, PhD*

FARMING: Education

46. **Considerations for Communicating Safety Information to a Diverse Stakeholder Audience in Western Ag**  
Presenter: Kara Schilli, Western Center for Agricultural Health and Safety  
*Co-authors: Teresa Andrews, MS, Heather Riden, MA*

47. **NIOSH Ag Centers Partner on “Telling the Story” Project**  
Presenter: Scott Heiberger MS, Upper Midwest Agricultural Safety and Health Center/National Farm Medicine Center  
*Co Authors: Melissa Ploeckelman, Aaron Yoder, PhD, Ellen Duysen, MPH, COHC, Stephanie Leonard, MS*

48. **Application of a Social Network Analysis to Assess Connectedness within the Agricultural Community**  
Presenter: Cheryl Beseler, PhD, Colorado State University  
*Co-authors: Annie Keeney, PhD, Lorann Stallones, PhD*

49. **Home Grown: Rural Nurses Trained to Serve Farmers and Ranchers**  
Presenter: Natalie Roy, MPH, AgriSafe Network

50. **Wyoming Good Riding Practices (WyGRiP) Project**  
Presenter: Jeremiah Vardiman, Northwest Area Extension Educator Ag. & Hort., University of Wyoming  
*Co-authors: Jeff Edwards, MS, Brian Sebade, MS, Hudson Hill, MS*

51. **Health Effects of Exposure to Cannabis in Workers in an Indoor Growing Facility**  
Presenter: Christopher Simpson, PhD, University of Washington  
*Co-author: Niloufar Ghodsian, MS student, Cora Sack, PhD, Karen Jansen, MS*

52. **Tribal Bison Workers –Imminent dangers, surveillance and practical solutions**  
Presenter: Ellen Duysen, MPH, COHC, University of Nebraska, Central States Center for Agricultural Safety and Health  
*Co-authors: Lucia Finocchiaro, MPH, Risto Rautiainen, PhD, Clayton Kelling, DVM*

53. **HEALWA: Authoritative Information for Washington Healthcare Providers**  
Presenter: Patricia J. Devine, MLS, HEALWA Program

54. **Preparing for Emerging Agricultural Health Threats**  
Presenter: Natalie Roy, MPH, AgriSafe Network