

Successful Strides with Dairy Producers & Workers

A Report of Engagement, Partnerships and Trust

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Investigations under way after man, 37, dies in farming accident

Victim in dairy farm accident identified; funeral is Wednesday

Worker Dies After Being Crushed by Cows at Ontario Dairy

Marietta man, 41, who was killed in grain truck accident worked at farm for decades

Man dies in manure pit on Spafford dairy farm

Man killed in accident on Surrey dairy farm

Calif. man fatally crushed by cows at dairy farm

Father of 5 killed in farm accident

Man, 2 Sons Found Dead In Maryland Dairy Farm's Manure Pit

Milking Past & Present & Future



A Snapshot of US Dairy Industry

↓ number of dairies

↑ herd sizes

20% ↑ milk output in last 10 yrs

Only 3% of dairies 1000+ head

50% production from 1000+ cow dairies

Trend to large-herd model

Milking 2-3x/day

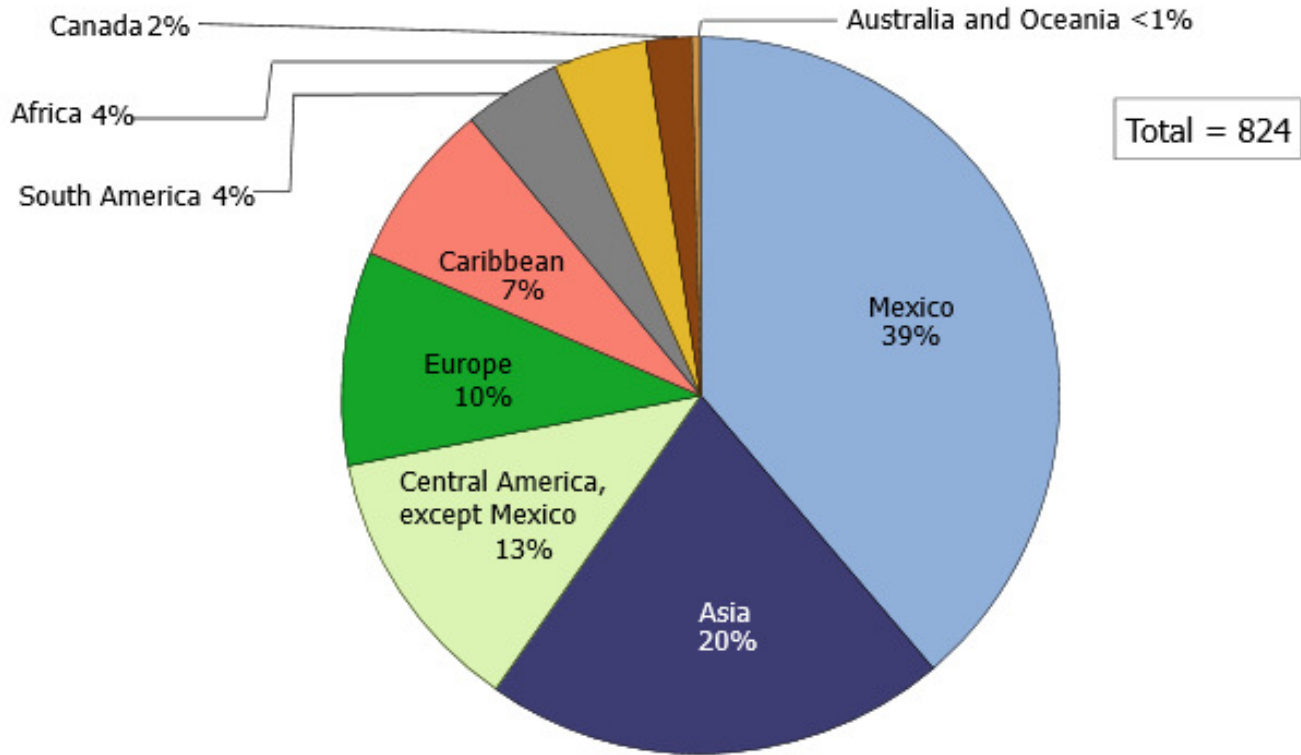


Dairy Workforce

- 77,000 immigrants (51%) worked on dairy farms in 2014
- number of immigrants working on dairy farms rose by 35% in six years
- Workers from Mexico, Central and South America
 - 85%+ Hispanic
- Low education level
 - 7% no education
 - 38% primary/elementary school
 - 18% middle school
 - 30% high school



Fatal injuries involving foreign-born workers, by country or region of birth, 2012



Workers born in Mexico accounted for the largest portion (39 percent) of foreign-born workers who died from work-related injuries in the United States in 2012.

Note: Percentages may not add to 100 due to rounding.
Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2014.

Occupational Health Research Challenges

- Setting

- Place of business (family legacy and home), not laboratory
 - Owner asks questions:
 - 1) What risk am I exposing myself (business) to?
 - 2) How do I (or industry) benefit from this?
 - 3) Will this disrupt any operations?
 - 4) How will data be used?

- Remote locations (travel)

- Language barriers

- Distrust among workers

- Work schedules

- Farm variability

- Research equipment technical challenges

Our Approach

LISTEN to dairy stakeholders, and RESPOND to needs and concerns with sound and relevant research and outreach efforts.

Our Story: Research

Respiratory

- Occupational Lung Disease and Bioaerosol/Endotoxin Exposure
 - Improved methods for inhalable sampling, endotoxin analysis (rFC, GC/MSMS), microbiome – metagenomics and Antimicrobial Resistance
 - Newer workers more susceptible to inflammatory lung disease
 - *Control mechanisms for dust (washing milking parlor, bedding materials) evaluated*



Our Story: Research

Musculoskeletal Symptoms Among Dairy Parlor Workers

- Symptom Survey

- 4 year study
- 32 dairies in 5 states
- N=452

- 89% male
- 97% Hispanic

- 85% kicked by cow

- Job related pain:

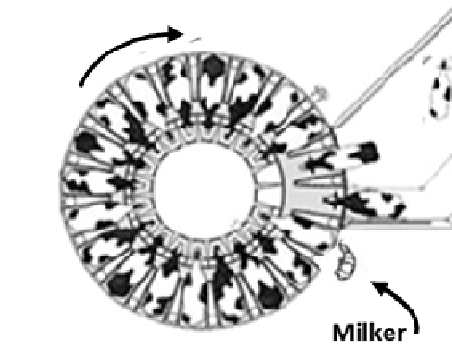
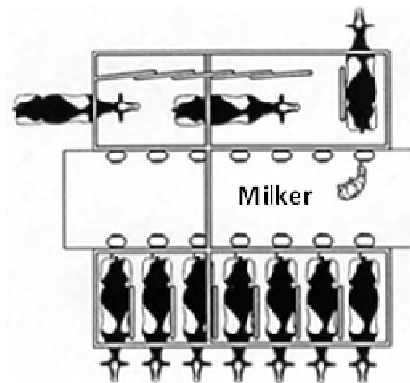
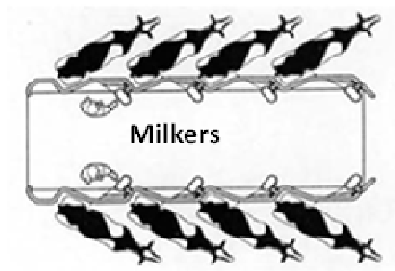
- 47% feet
- 42% upper back
- 40% shoulder
- 36% wrist
- 29% low back
- 25% neck
- 24% knee
- 19% elbow
- 19% hip



Our Story: Research

Ergonomics

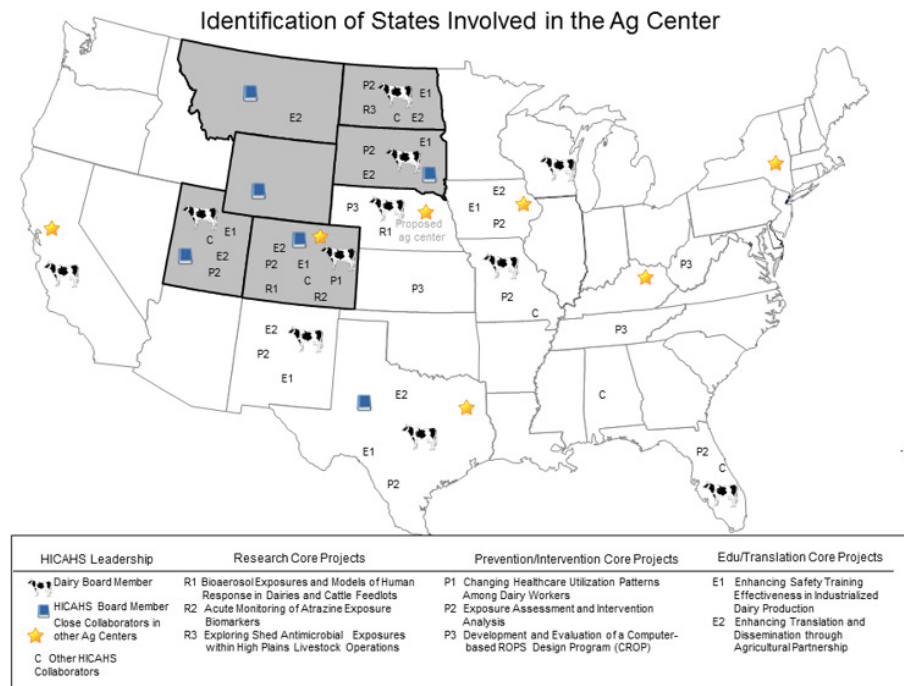
- Exposure Assessment and Intervention Analysis in Large-Herd Dairy Parlors
 - Full shift (8-12 hrs) direct measurement of physical exposures (muscle forces, posture, repetition, physiological load)
 - Comparison of parlor configurations
 - Intervention analysis
 - Milking equipment and tools



Our Story: Engagement & Outreach

Research and Outreach US Footprint

- Colorado
- Idaho (upcoming)
- Iowa
- Kansas (upcoming)
- Minnesota
- New Mexico
- New York (upcoming)
- North Dakota
- South Dakota
- Texas
- Utah
- Wisconsin
- Wyoming



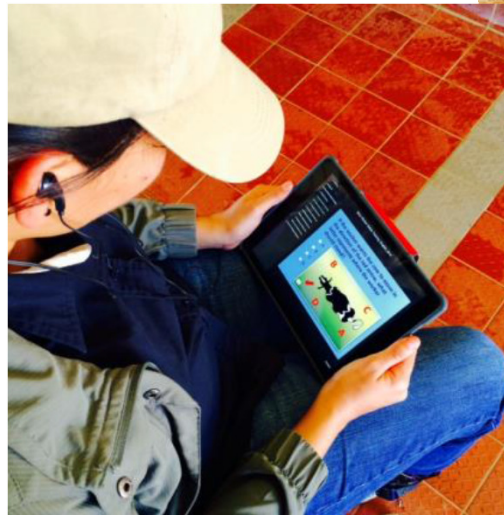
Our Story: Engagement & Outreach

Worker Training

OSHA Susan Harwood Targeted Topic Training (Year 2 funded)

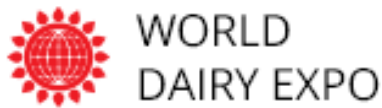
Dairy Worker Safety Training Using Mobile Technologies

- 357 workers trained in 10 months
- Levels I, II and III Effectiveness Evaluations
 - Level II: 72% Pre-test; 90% Post-test



Our Story: Engagement & Outreach

Dairy Industry and Farmworker Conferences



Western States Dairy Producers Trade Association

Our Story: Engagement & Outreach

Monthly Safety Articles

Nearly 94,000 reader subscriptions

24 articles to date



**PROGRESSIVE
DAIRYMAN**

Our Story: Partnerships

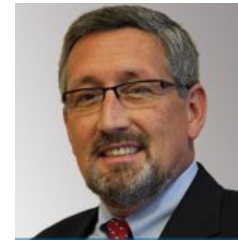
Producers



Our Story: Partnerships

Key Advocates

- Robert Hagevoort, PhD, New Mexico State University
- Bill Wailes, Colorado St University
- Wyatt Smith, PhD, DeLaval
- Juan Valez, DVM, Aurora Organic Dairy



Recipe of Success: Partnerships

NIOSH Ag Centers



Recipe of Success: Partnerships

State Extension



Recipe of Success: Partnerships

Industry Service Providers



Recipe of Success: Partnerships

International Dairy Research Consortium (IDRC)

Australia

Canada

Denmark

Finland

Germany

Ireland

Italy

Netherlands

New Zealand

Sweden

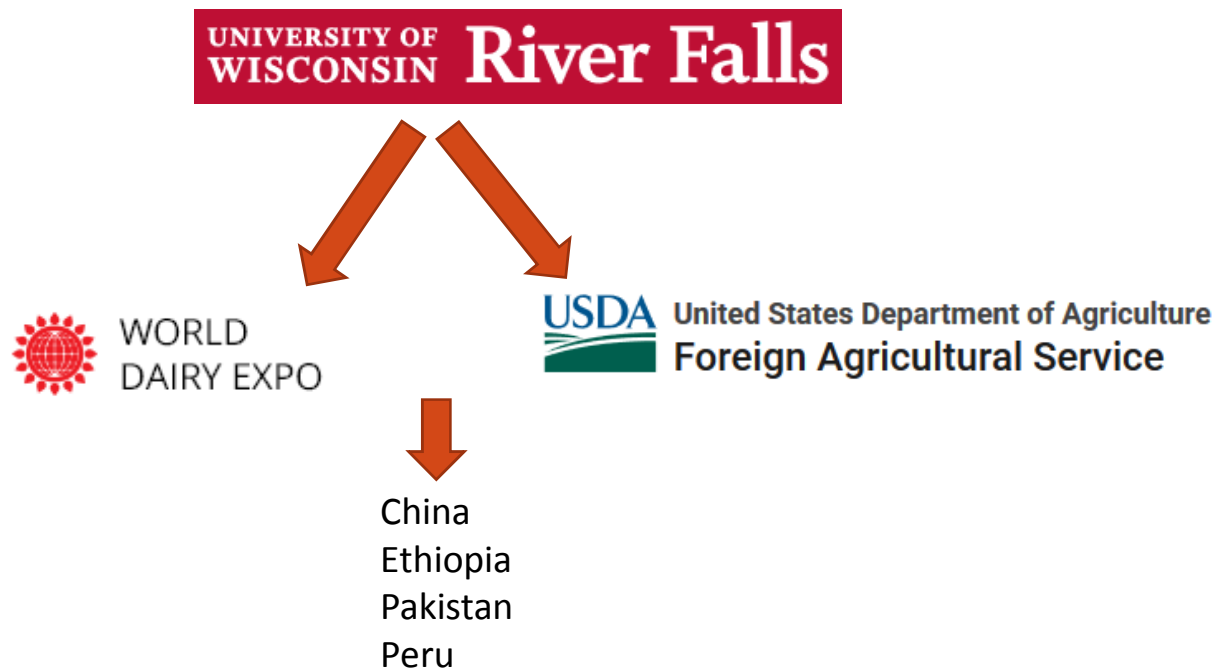
United States



A Global Perspective on Modern Dairy: Occupational Health and Safety Challenges and Opportunities

Journal of Agromedicine
(Volume 18, Issue 3, 2013).

Recipe of Success: New Partnerships, New Opportunities



Recipe of Success: Building & Maintaining Trust



Questions?

