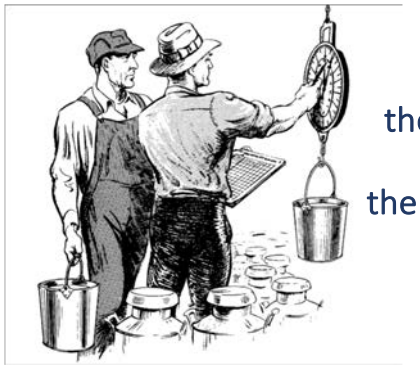
College of Agricultural, Consumer and Environmental Sciences



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How much does the *welfare of the people* affect the *welfare of the animals*?

Robert Hagevoort PhD
Extension Dairy Specialist & Topliff Dairy Chair
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The College of Agricultural, Consumer and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research, and Extension programs.

Dr. Robert Hagevoort

- Associate Professor & Extension Dairy Specialist
  - New Mexico State University
- BS Tropical Animal Nutrition
- MS Range Nutrition
- PhD Animal Nutrition
- Focus
  - 15 years private dairy consulting experience
  - 12 years Extension Dairy Specialist
  - U.S. Dairy Education & Training Consortium
  - Regulatory and environmental issues
  - Dairy workforce training & safety

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Dr. David Douphrate

- Physical therapist
- Business administration
- Doctorate in occupational health and safety
- Since 2003:
  - Worker health and safety
  - Workplace productivity and efficiency
  - Safety management and leadership
  - Dairy industry
  - 12 states
  - 75+ dairy farms and owners
  - 3000+ dairy workers

UTHealth | The University of Texas Health Science Center at Houston | School of Public Health

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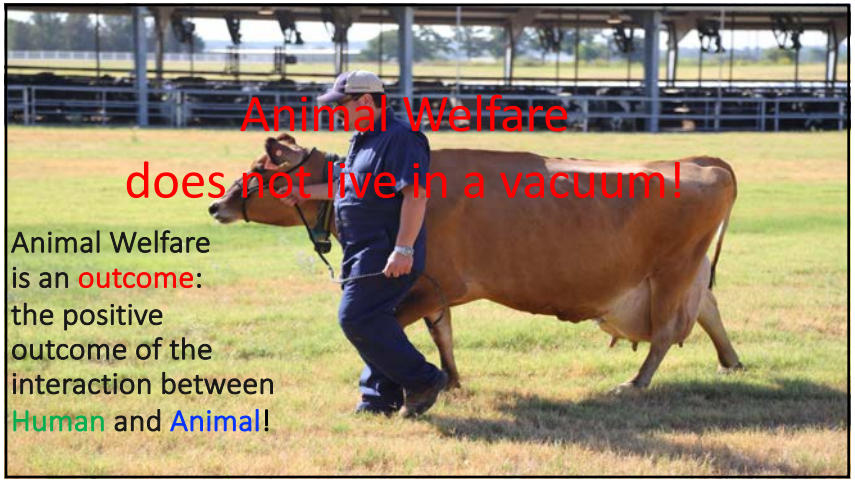


Animal Welfare is an outcome: the positive outcome of the interaction between Human and Animal!

What about the Human Component?

- **Skills & Knowledge: the part you can observe**
- **Attitude: the part you cannot observe, or what is unknown to others**

What about the Animal Component?

Phenotype (or Production)=
Genotype + Environment
P = G + E

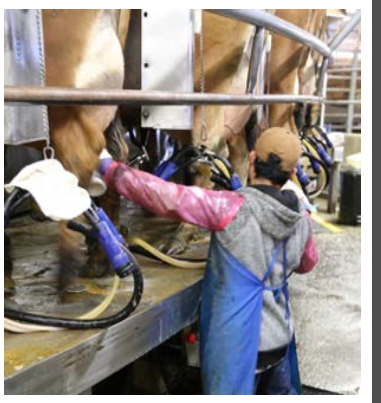
Environment =
combined influence of nutrition, housing, climate, and human influence

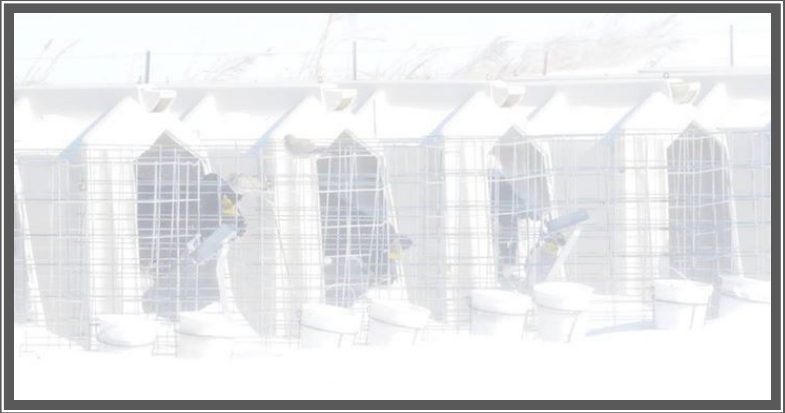
Human influence =
Innate or natural behavior (instinct) + Learned behavior

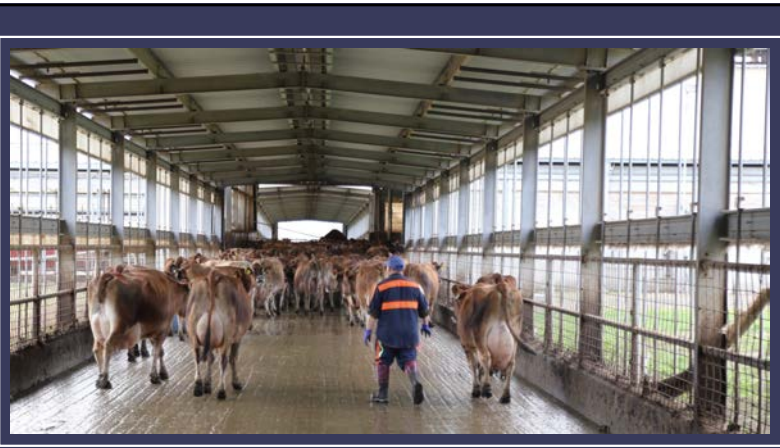
How do we measure outcomes & performance?

- What performance metrics do we have for cows on the dairy?
  - Nutrition related?
  - Economics?
- What about performance metrics for humans on the dairy?
  - Nutrition metrics?
  - Milker metrics?
  - Economic metrics?

So we've got the cow part down…
What's so hard about that human part?








102°
SUNNY

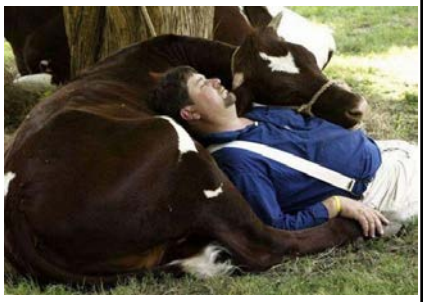
We design dairies around cow comfort:

Take Home Messages of a Cow Comfort Class:

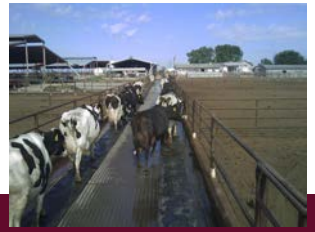
- Reduce time in lock up stanchions
- Reduce time spent milking
- Maximize "cow-time"
- Maximize stall/bed/coral comfort
- Avoid overstocking in close-up, fresh and high cow pens
- Separate lactation groups: definitely 1st lactation
- Maximize nutritional comfort
- Mitigate heat stress
- Make Cow Comfort your *Modus Operandi*!

Dr. Gordie Jones:
"Milk is the Absence of Stress"

What happened to "worker comfort"?



Do we design dairies around "worker comfort" ERGONOMICALLY - to maximize worker performance?



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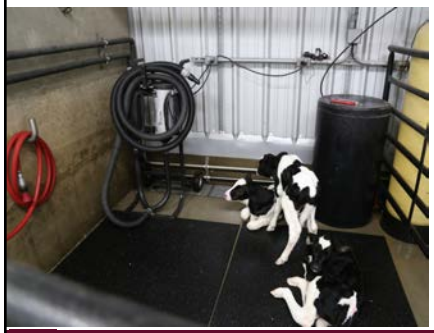
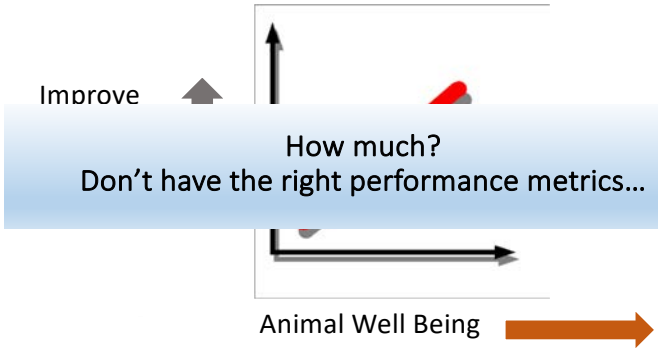


The Million Dollar Question(s):

- To which extend are worker conditions affecting worker performance?
- When worker performance suffers, how much does animal welfare suffer?
- How does this economically effect the dairy's bottom line?

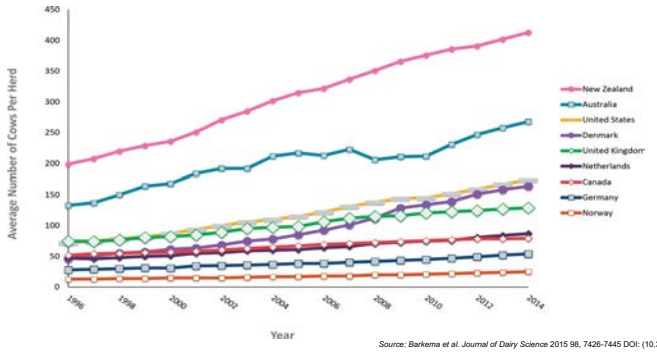
Animal Welfare as a function of Human Welfare:



What I do know:

- Dairies are larger (number of cows)
- Larger dairies employ more people – app. 1 per 100 cows
- Employees are not just family labor anymore – hired labor
- Employees usually from different cultural/linguistic backgrounds (foreign born)
- Employment often not based on skills
- Limited/unknown education/training pertaining to position
- May not be familiar working with/around large herding animals
- We have an industry which is *"in transition"*

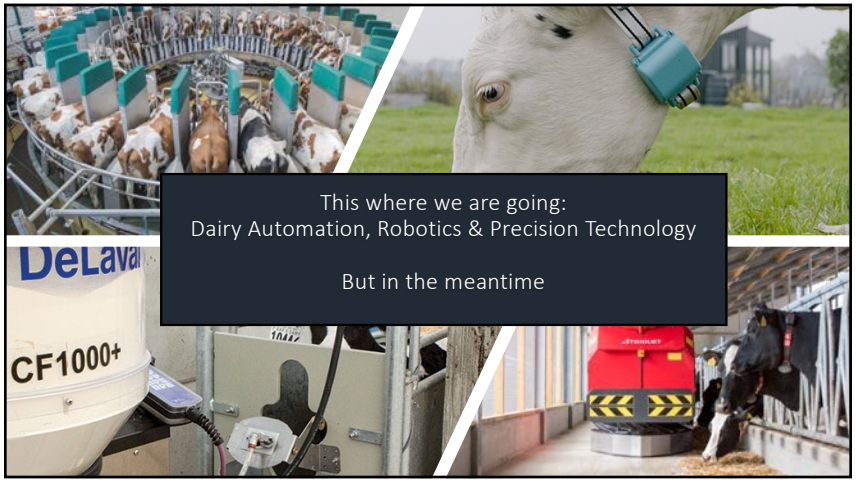
Increasing herd sizes everywhere!



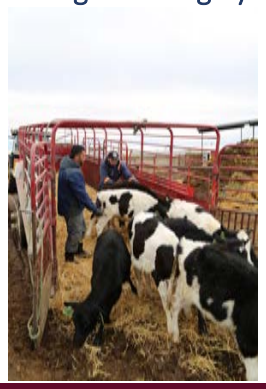
Source: Barkema et al. Journal of Dairy Science 2015 98, 7426-7445 DOI: (10.3168/jds.2015-9377)

Looking down the road:

- What is the next highest expense on large operations?
- After **feed costs**: **labor costs** (app. 10%)
- Some industry experts predict 1 employee for 200 cows?
- Automation companies already figure with 1 employee per 250/300 cows
- Fewer employees – but higher tech skills….
- High level of specialization at each position
- Define: what are those higher tech skills?
- Who will be teaching and training these folks on these skillsets?
- Understand: "manual labor" does not equate "low skill labor"
- Manual vs automation?



Who is training & educating these highly specialized people?



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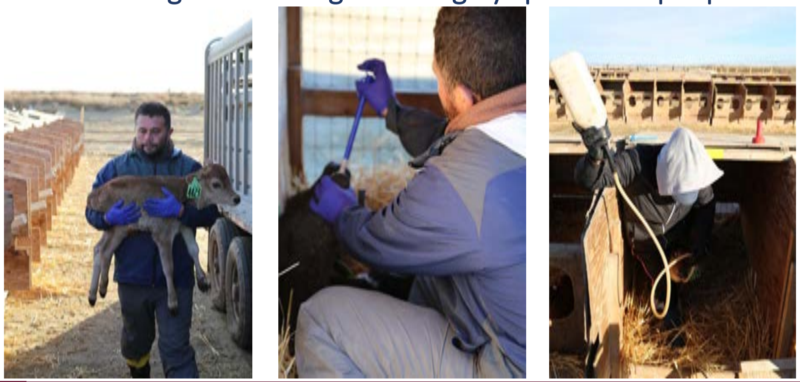

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Dairy Safety Awareness Training: m-learning

- Susan Harwood (DOL) Training Grant
  Mobile platform learning (m-learning):

– Effectiveness evaluation (Kirkpatrick model):

- Level 1: 1,487 employees 41 farms: NM, TX, KS, CO, NY
- Level 2: avg. pre-test score 73% and the avg. post-test score 94%
- Employees receive certificate
- Dairy receives letter certifying who attended, scores pre/post
- Level 3: evaluating impacts (3-6 mos.) indicate changing safety behavior

Trained Workers:

Gender (%)	
Male	1,256 (88.6)
Female	162 (11.4)
Age	34.4 (12.0)
Job position (%)	
Milker	489 (34.5)
Feeder	67 (4.7)
General	862 (60.8)
Years of experience	7.4 (9.1)
Highest education level achieved (%)	
No Education	83 (6.1)
Elementary School	385 (28.2)
Middle School	334 (24.4)
High School	391 (28.6)
Higher Education	174 (12.7)

Country of Origin (%)	
Mexico	716 (52.4)
Guatemala	310 (22.7)
United States	251 (18.4)
Honduras	35 (2.6)
El Salvador	27 (2.0)
Colombia	9 (0.7)
Puerto Rico	8 (0.6)
Peru	2 (0.2)
Cuba	2 (0.2)
Netherlands	2 (0.2)
China	1 (0.1)
Nicaragua	1 (0.1)
Portugal	1 (0.1)
Native language (%)	
Spanish	892 (64.5)
K'iche	310 (22.4)
English	178 (12.9)
Other	3 (0.2)

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General findings and observations:

- Large majority no longer coming from an Ag-background
- Large majority no experience working with large animals or equipment
- 60% of employees 5th grade level education or below
- High level of illiteracy or low reading comprehension level
- Shift in typical workforce make-up to more Central Americans
  - different culture (indigenous (Mayan) vs. Hispanic)
  - different language (K'iche vs. Spanish)
  - different body stature/build
- Do not underestimate the power of recognition…

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Translations & Voiceover

Don't underestimate the power of recognition!!

Findings and observations from animal handling training

- Large majority have no experience working with large animals or equipment
- Many employees have no idea about animal senses
- Many employees have wrong perceptions about how to act around animals
- Even seasoned workers who may know the "what" may not know the "why"
- Experienced workers appreciate the validation of their skills
- Owners/managers can make a great impact by reinforcing how important animal handling skills are to them
- Many owners managers take this awareness training to build on and practice concepts with workers

What does all of this mean for animal welfare?

- Animal handling is much more *an art* then *a task*; it takes two to tango!
- Correct animal handling starts the day the animal is born and continues for a life time.
- Animal handling skills are learnt slowly by observing and practicing, over and over again….
- Given that animal handling is a skillset: the question needs to be asked what human personality traits does a cow handler need to possess?
- That will answer the question: "Did we select the right people for the job"?
- *Personal experience*: Dairies where handlers understand *why* they are doing *what* they are doing, cows are calmer, more curious and less fearful of humans and human interactions.
- Animal well-being benefits as we teach and train employees on the skills and knowledge.
- Animal well-being benefits as we focus on coaching attitudes towards working with large animals (motivation, confidence, integrity, honesty, enthusiasm, commitment).

What does that mean for owners & management?

- Owners and managers are now people managers, not cow managers
- Yet they were raised to be cow managers
- They went to school to learn about dairy/farm management (tech skills)
- Where did they learn how to manage people? (soft skills)
- What about their personality types (Briggs Meyers)?
  - Introverts vs. Extroverts
  - Sensing - literal, practical, reality, facts vs. INtuitive - imaginary, figurative, poetic?
  - Thinking vs. Feeling
  - Judging vs. Perceiving

What does all of this mean for animal welfare?

- Animal welfare doesn't live in a vacuum, it is the result of a *correct* or *mindful* human-animal interaction
- Animal welfare is a commitment, it starts at the top and trickles down
- Animal welfare is the result of people interacting correctly with animals, understanding and anticipating how animals will respond to pressure
- Animal welfare is jeopardized/compromised by the misunderstanding of herding behavior and cow senses
- Animal welfare is jeopardized or compromised by incorrect human behavior around animals

What does all of this mean for animal welfare?

- Employees typically mean well, but if you can't anticipate what animals will do, it's easy to get frustrated
- Frustration is the perfect setup for the wrong outcome, and possible animal mishandling or abuse
- Human well-being (safety) concerns increase with lack of understanding of what a 1,500 lb animal can do
- Cows have great memories, recognize people well and know who treats them well or not
- Learned behavior is an important component of the human-animal interaction equation

Questions?

For more info contact:
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dairydoc@nmsu.edu