

Let's Help Keep Farmers, their Families and Workers Alive and Well in Agriculture

2019 North Carolina Agricultural Health and Safety Symposium

Kelley J Donham MS,DVM, DACVPM

Emeritus Professor, University of Iowa Public Health

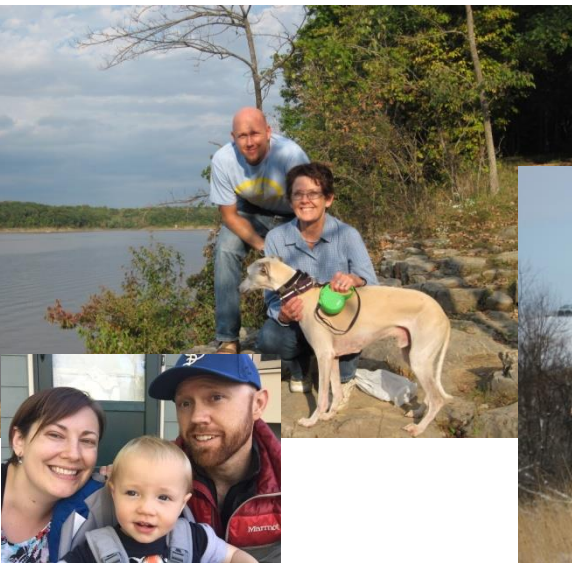
Kelley-Donham@uiowa.edu

- **What am I doing here?**
- **History and Background**
- **Definition & Principles of Agricultural Medicine**
- **Agricultural Medicine – the Profession**
- **Occupational Health of the Agricultural Population**
- **The Great Urban – Rural Divide**
- **Stress Mental Health**

Kelley Donham MS, DVM, DACVPM

Professor Emeritus – University of Iowa – Agricultural Medicine

kelly-donham@uiowa.edu 319-530-6002



The Iowa Connection

History of the Institute of Agricultural Medicine



Iowa
City



College of Public Health

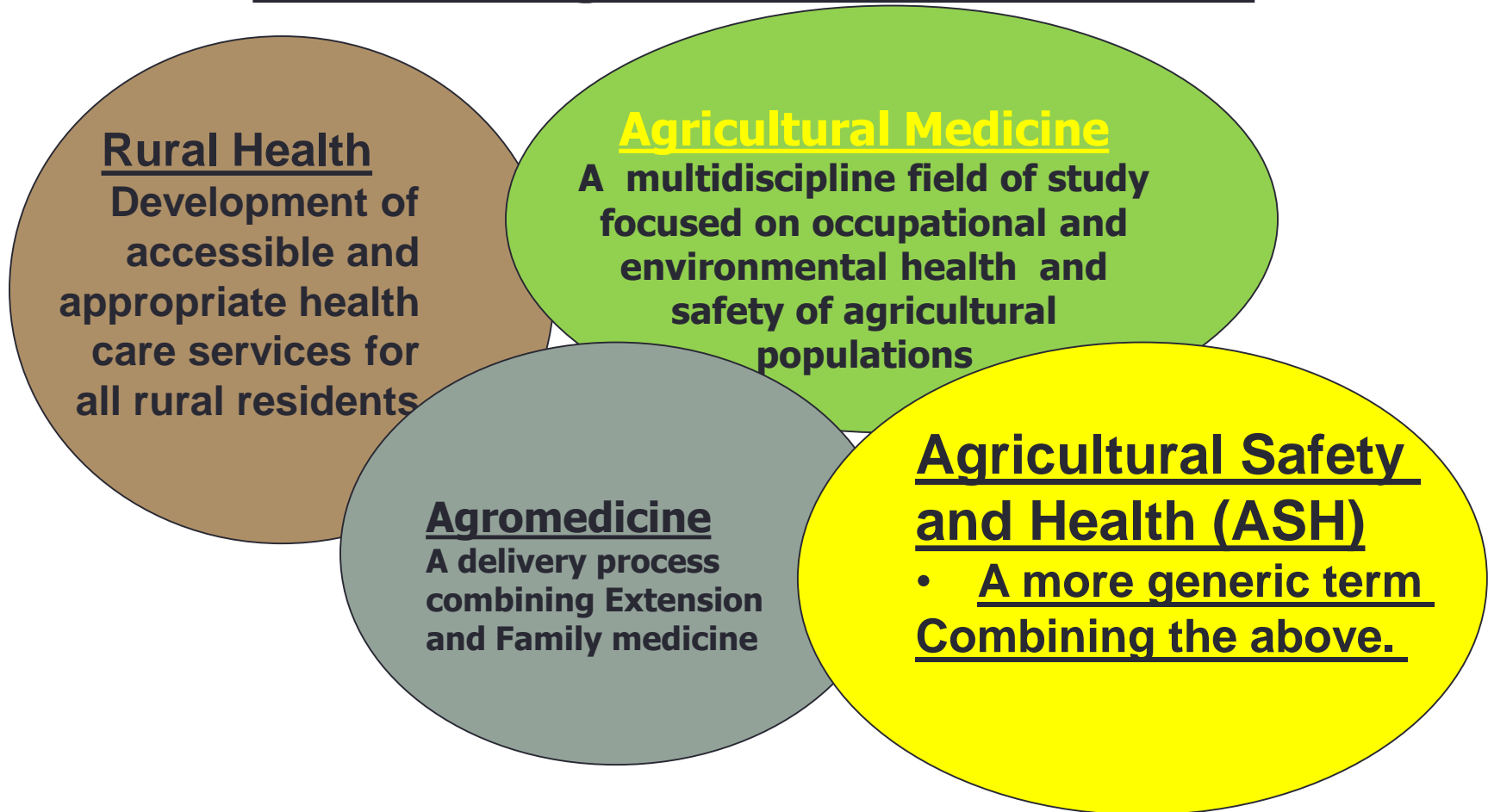
The
University of
Iowa



Institute for Rural Environmental Health

DEFINITIONS

What is Agricultural Medicine?

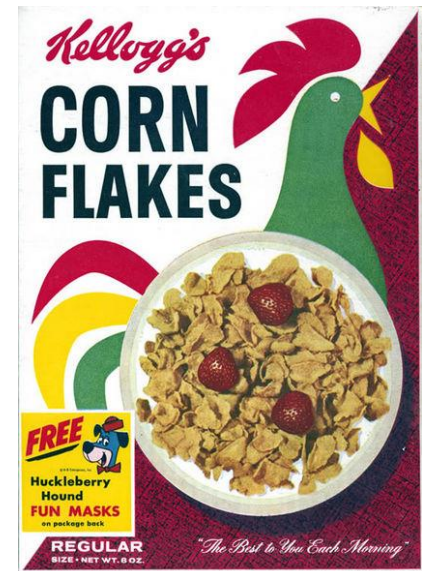


Agricultural Medicine: definition

Donham et. al. J Agromedicine 10(1):5-11, 2005.

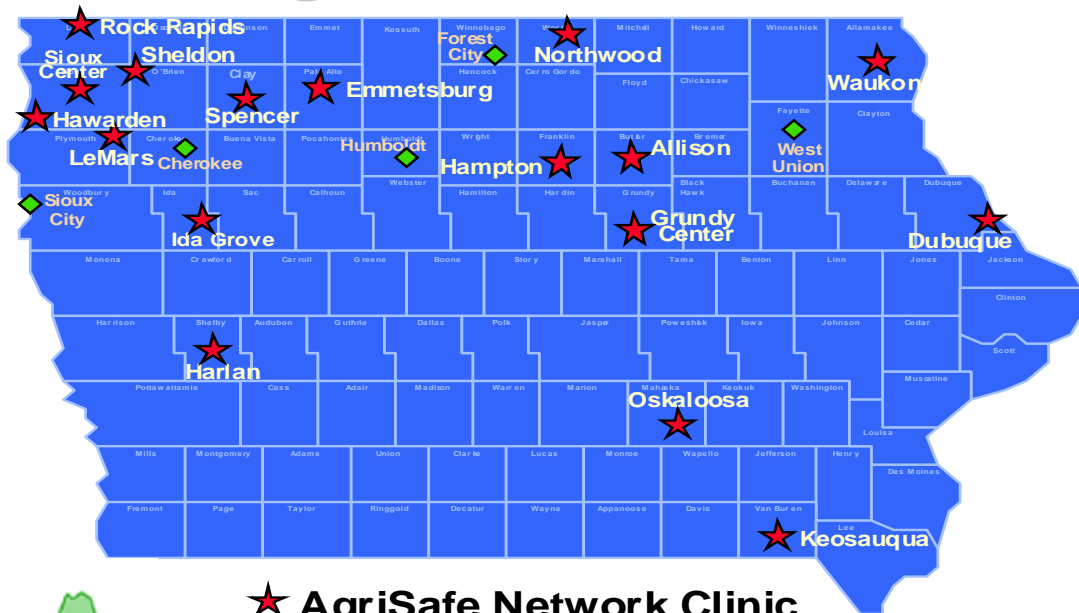
History of Agricultural Medicine

- **1713 – Bernardo Ramzinni – Italy “Diseases of Workers”**
- **1940’s – Agricultural Safety in Extension, Safety Council, Farm Bureau**
- **1945 – National Inst. Farm Safety – (Now ISASH)**
- **1955: The Beginnings of Agricultural Medicine at the University of Iowa (Medical and Public Health approach).**
- **1974: Beginning of Agricultural Medicine Education**
- **1985: Marshfield Farm Med. Center, & Agromedicine Consortium**
- **1987: Founding of the AgriSafe Network**
- **1990: Iowa’s Center for Agricultural Health and Safety (I-CASH)**
- **1990: NIOSH Ag Centers (10 centers today)**
- **1989: Founding of NC Agromedice Institute**
- **2006: MS. PhD Ag medicine – U.IA.**
- **2007: ASHCA**



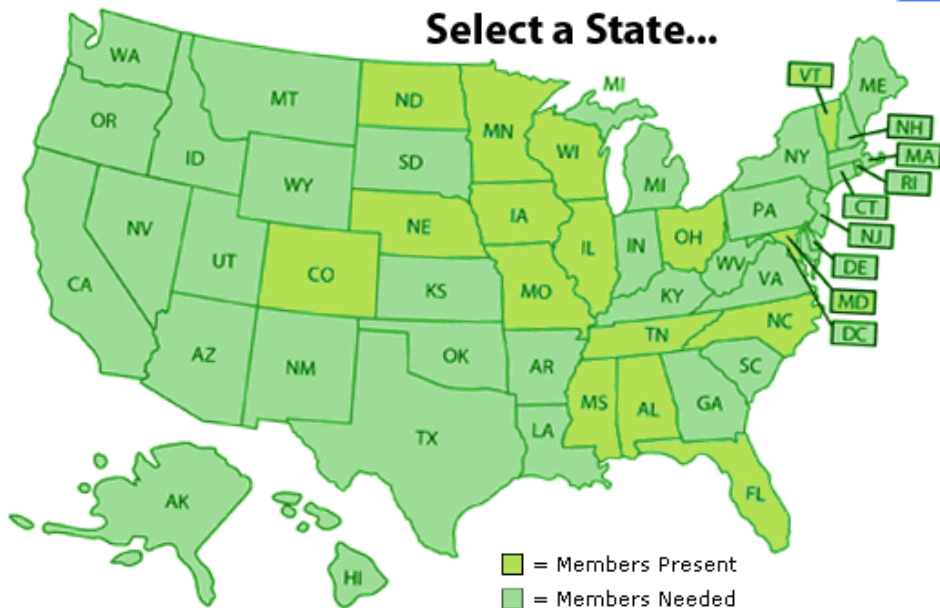
Iowa's Center for Ag Safety and Health (ICASH)

AgriSafe Network



- ★ AgriSafe Network Clinic
- ◆ Potential Network Clinic

Select a State...



■ = Members Present
■ = Members Needed

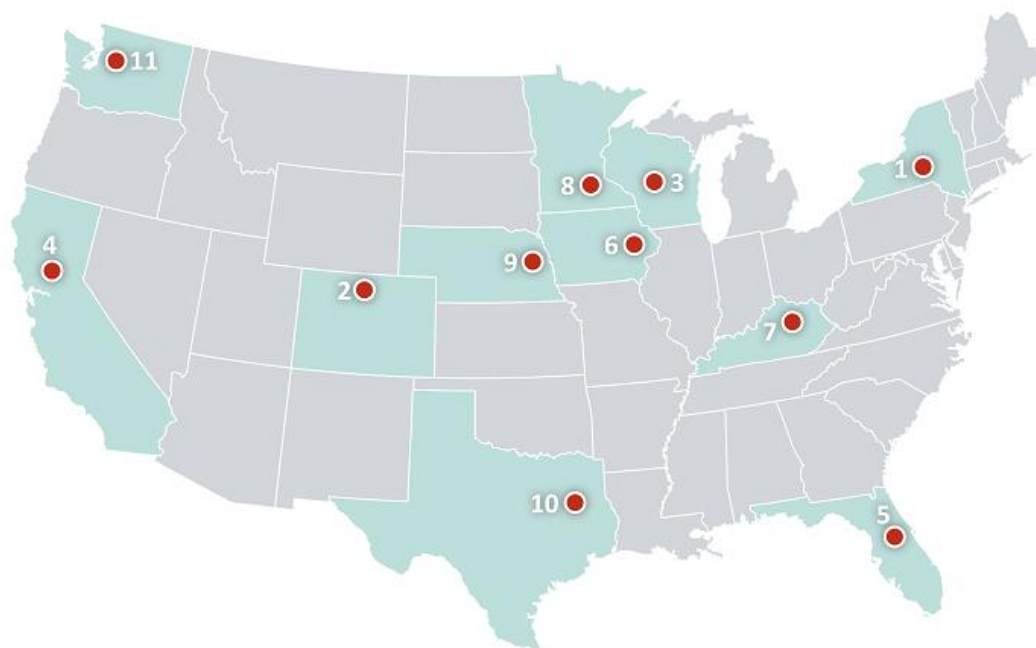
1987 – 1990 Agriculture at Risk Policy Process

- Strategic Process
 - The education
 - The Conference
 - The Consensus Process
 - Formation of the National Coalition for Agricultural Safety and Health
- Surgeon General's Conference
 - Antonia Novello



The NIOSH Ag Centers (2018)

NIOSH Centers for Agricultural Safety and Health

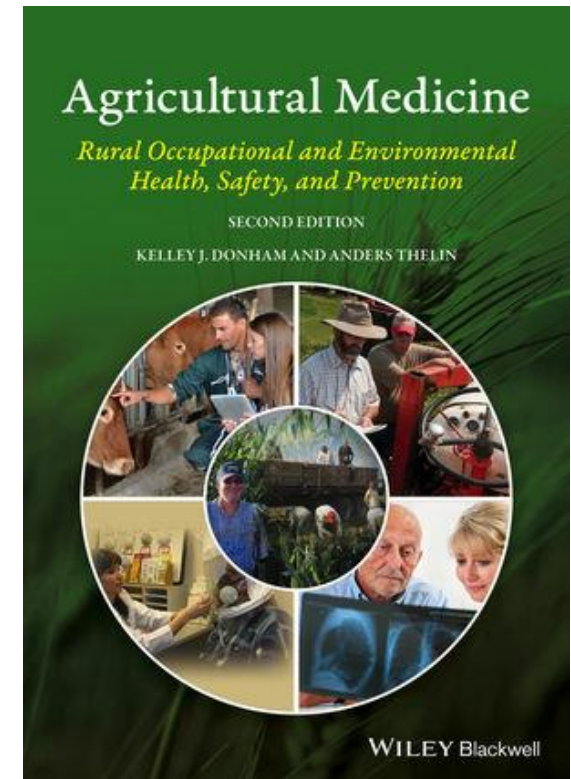
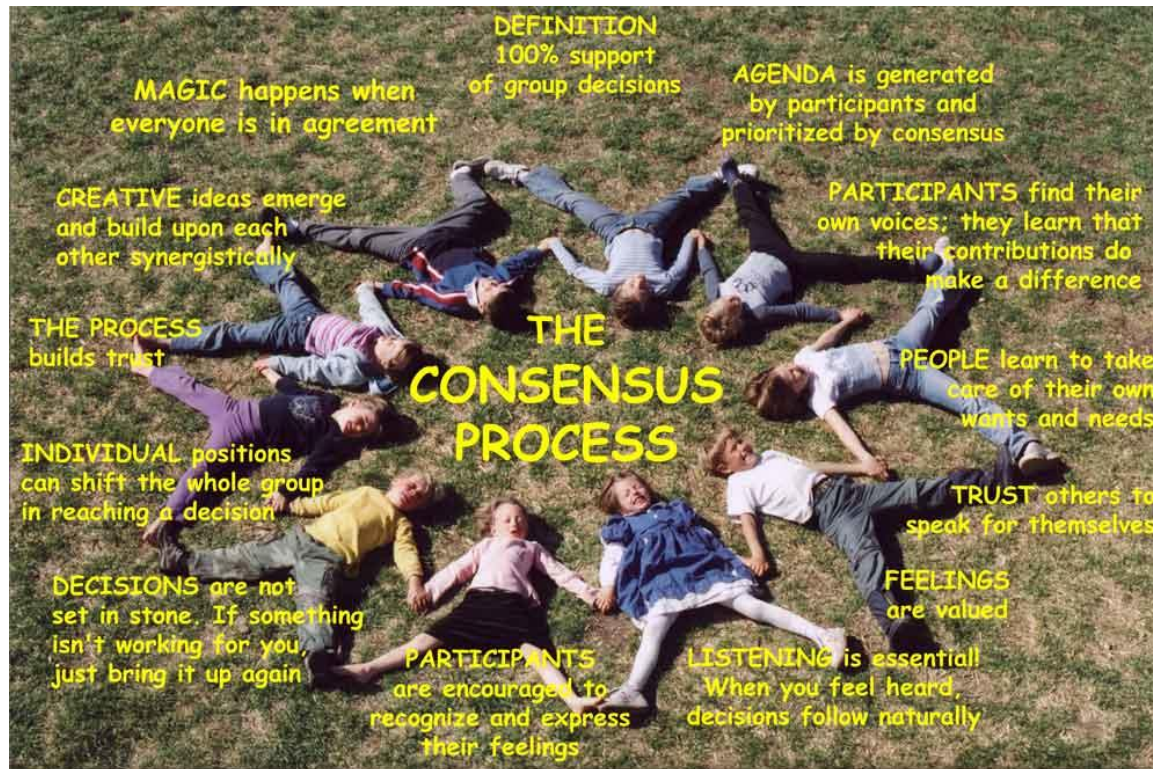


1. Bassett Healthcare
2. Colorado State University
3. National Farm Medicine Center
4. University of California, Davis
5. University of Florida
6. University of Iowa
7. University of Kentucky
8. University of Minnesota
9. University of Nebraska Medical Center
10. University of Texas Health Science Center, Tyler
11. University of Washington

Education in Agricultural Medicine

- 1974 – U.I. medical Students
- 1983 – Medical Practice in Rural Communities
- 1983 – Nurse training
- 2006 – Certificate, MS, and PhD in Agricultural Health and Safety (U. IA.)
- Building Capacity in other states

Building Capacity in Agricultural Medicine: National Consensus Process: 2006 and 2016 2nd ed. (The Core Course, The BOOK)

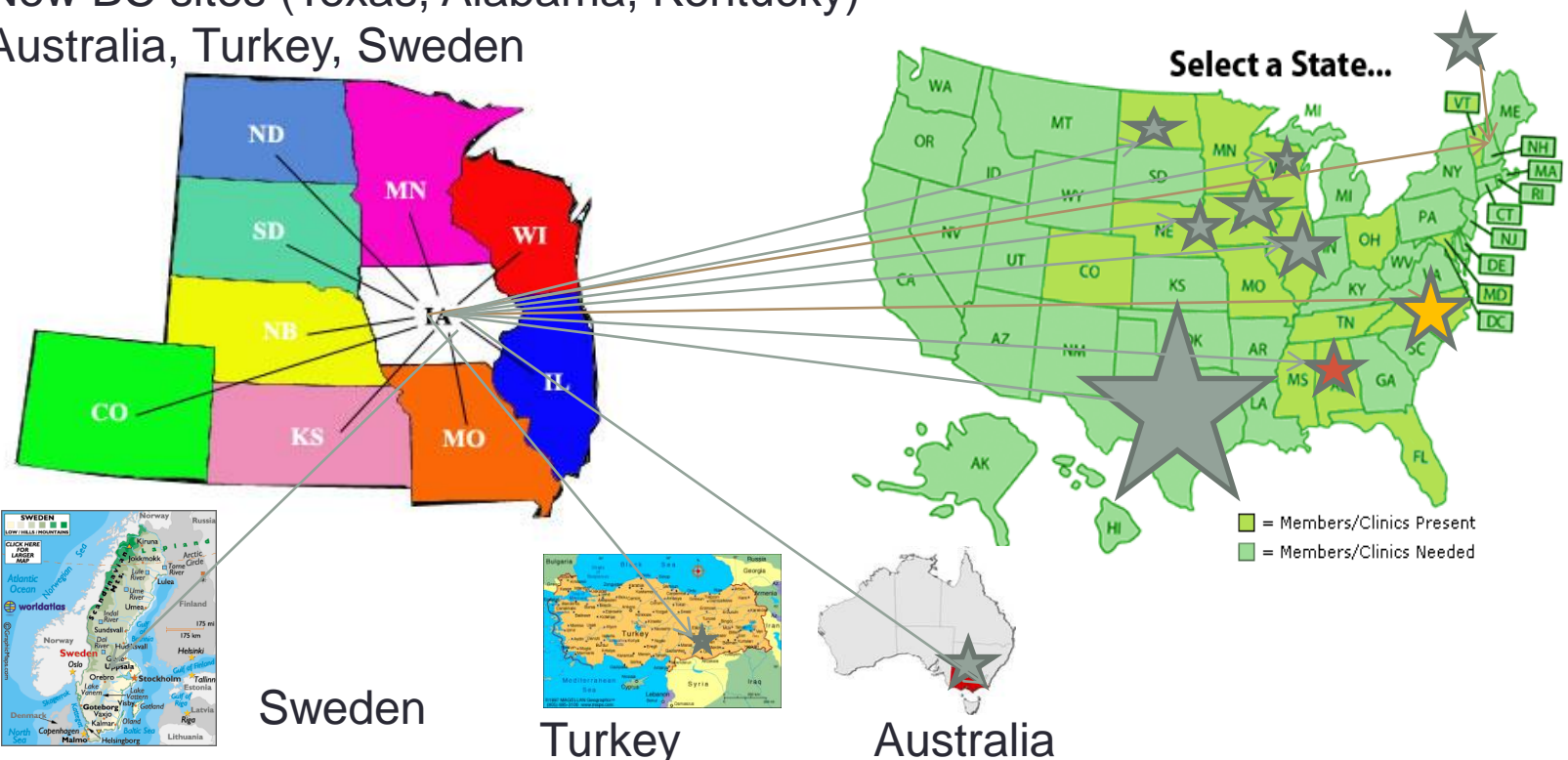


Building Capacity in Agricultural Medicine

2007 -- 2018



1. States receiving training (includes Vermont and North Carolina)
2. New State-Based AgriSafe Networks resulting from the Program
3. Number of health and safety professionals trained = 850
4. Number of new AgriSafe Providers = 26
5. New BC sites (Texas, Alabama, Kentucky)
6. Australia, Turkey, Sweden



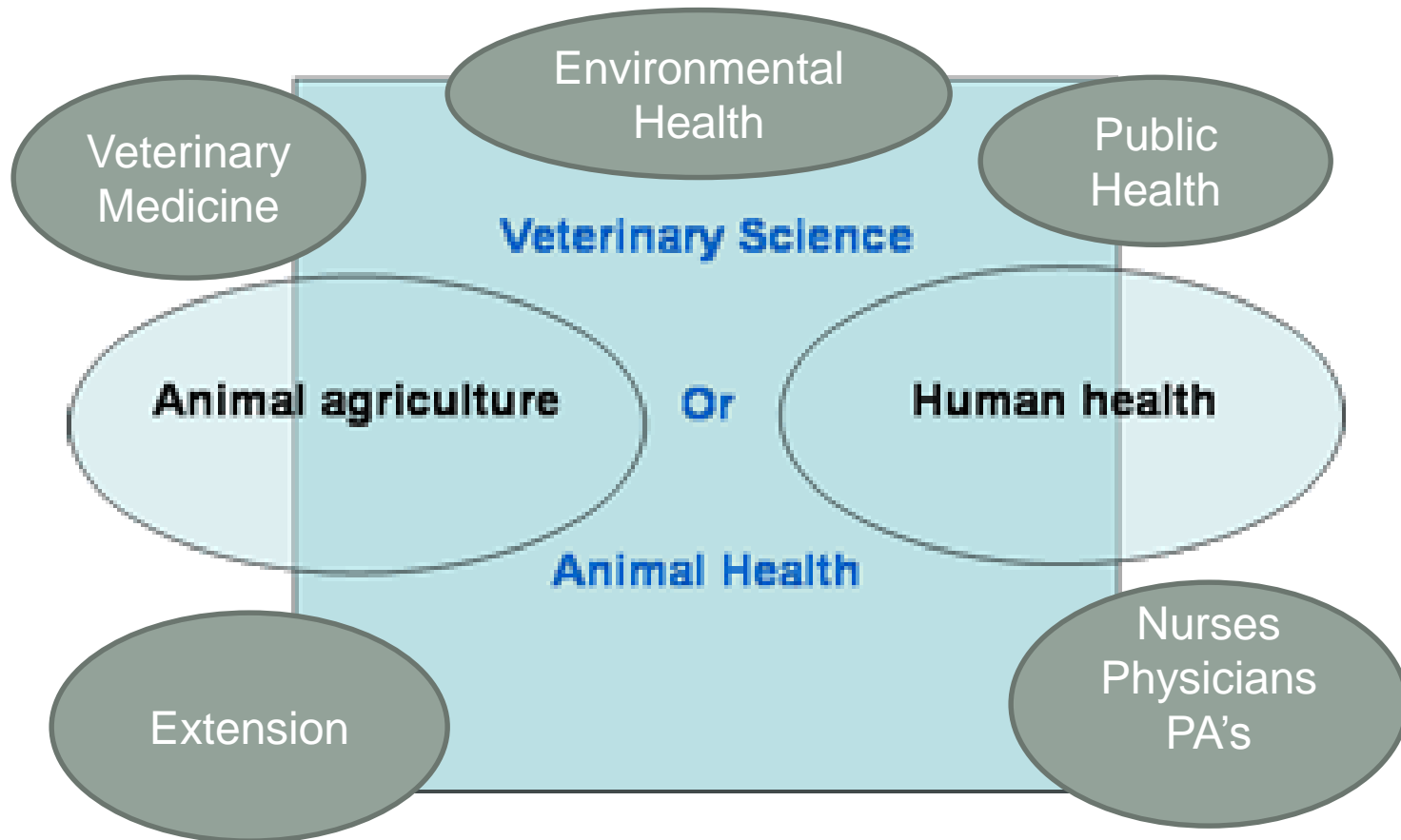
Connecting the environment to the patient

- The agricultural medicine professional must “see through” the patient to his/her environment that brought him/her to you
- Scott was misdiagnosed 3 times before a provider connected his illness to his environment
- Hands on Experience



Agricultural Medicine is Multidisciplinary “One Health”

One Medicine Collaboration



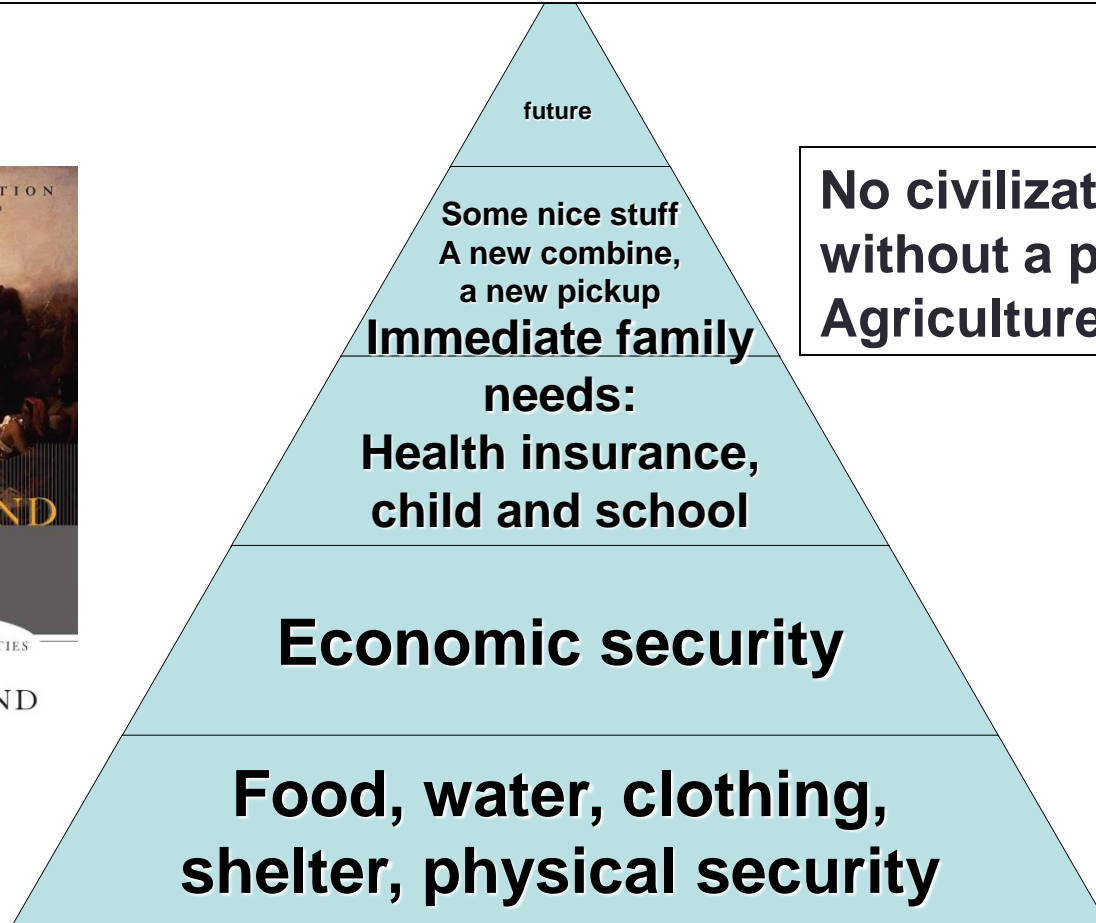
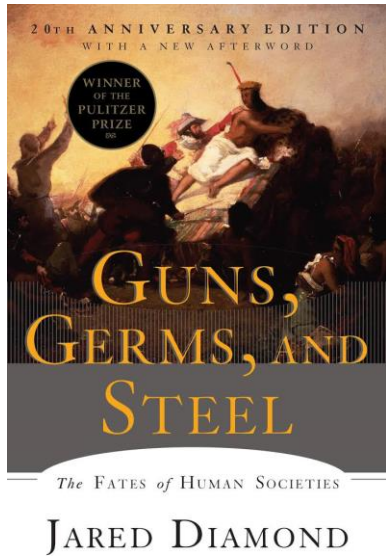
Agricultural medicine teaches cultural sensitivity and competency

- Attachment to the land and the work
“To farmers, the land is everything.”
(Mike Rosmann Agriwellness)
- Work is first, their purpose in life
“Farmers live to work, not work to live”
(Sydney, AU cab driver)
- Feeling of a Special Calling – Produce Food and Fiber for the rest of us
- Proud, Independent, Leave us alone, let us do our work
- Acceptance by them is by being humble, and having knowledge of farm work



THE IMPORTANCE OF AGRICULTURE TO CIVILIZATION

Hierarchy of Peoples' Needs (A modification of Maslow 1968)

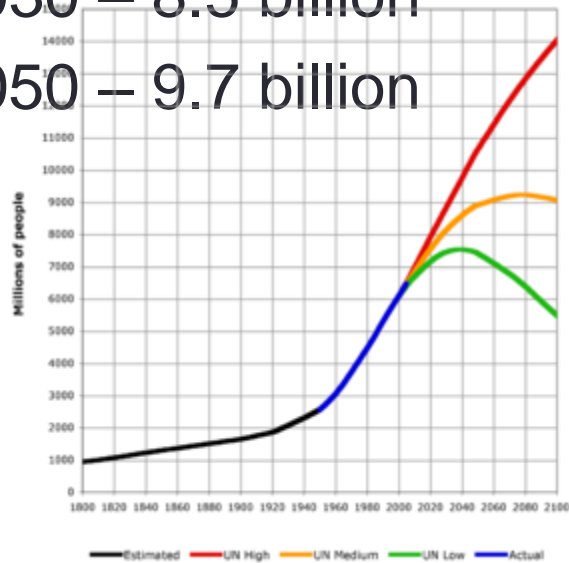


**No civilization has thrived
without a productive
Agriculture**

We must strive for balance between the Ag economy, its people, and the environment.

The Importance of and Sustainability of Agriculture

- Food security
- 2018 - 7.3 billion
- 2030 – 8.5 billion
- 2050 – 9.7 billion



But -- The 900 lb gorilla in farmers' health is their occupational health

- 400 fatalities
- 21/100,000
- 6x all workers
- 70,000 disabling injuries
- 2-3 x that of EU and Canada
- \$3 Billion/year
- 7X suicide rate

SUCCESSFUL
FARMING...

Farmlife can be hazardous
to your health...



Occupational Health Hazards



Topics in the core course

- **Special Risk Populations** (women, children, elderly, immigrant farm workers)
- **Respiratory diseases (13%)**
- **Ag Chemicals & Pesticides** ,
- **Zoonotic infections**,
- **Veterinary Pharmaceuticals**,
- **Mental Health**
- **General Environmental hazards**
- **Acute and Chronic Trauma**
- **Musculoskeletal diseases (14%)**
- **Noise, vibration, heat, cold injuries**
- **Ag Skin diseases (56%)**
- **Cancer in ag populations**
- **Prevention**



Agricultural Medicine Part II

- Structure of Agriculture & Demographics
- Vulnerable Populations
- Megatrends in Agriculture
- The Great Cultural Divide/Stress/Mental Health
- What to do to make it better

What kinds of farms do we have today?

- Niche/specialty/organic farms (Alternative Agriculture)



- Family farms
Farms in the middle



- Large (Commodity) farms



Family Farms

(The farms in the middle)

- Farm/principal operators – 2,000,000
- Farm family members – 4.5 million
- 30% - 40% work off farm
- Farm employees (workers):
 - 1,000,000 (local)
 - 1,000,000 seasonal and migrant



Large Commodity Farm- Agriculture

- 5% of farms
- 50% of product
- Farm workers/managers – 500,000 [(documented) < 10% of total exposed persons]



Specialty-Niche-Organic Farms

- Increase farms in 2017 census
- Niche farms = growing sector
- Agrotourism
- 8,000 organic farms in US



Vulnerable Populations in Agriculture

- Women



- Children



- Elderly



- Anabaptist religious groups



- Farm workers



With Respect to Barb Lee The Ying and Yang of Kids on the Farm

- Risks?
- Benefits?



Children Living on the Farm

- **100 kids die annually from farm work in US, 10 in IA**
- **Farm kids - 1.03 million, > 519,000 work**
- **213,000 hired on other farms**
- **100 fatalities/year, 16,000 injured**
- **Home, workplace, and playground all in one**
- **Male children are operating machinery by age 10**
- **Hazards include drownings, runovers, animals, ATV's**

Child Development Opportunities: Growing up on a Farm

- Responsibility
- How to work
- Independence
- Skills
- Understanding life/food cycles
- Initiative
- Problem solving
- Parental connections
- Neighboring
- Protection from atopic asthma (hygiene hypothesis)



Keeping kids safe and healthy on the farm

- The National Children's Center, Marshfield, WI
- The North American Guidelines
- Farm Safety for Just Kids
- Day Camps
 - Progressive Farmer Safety Days
- Day care for farm kids?

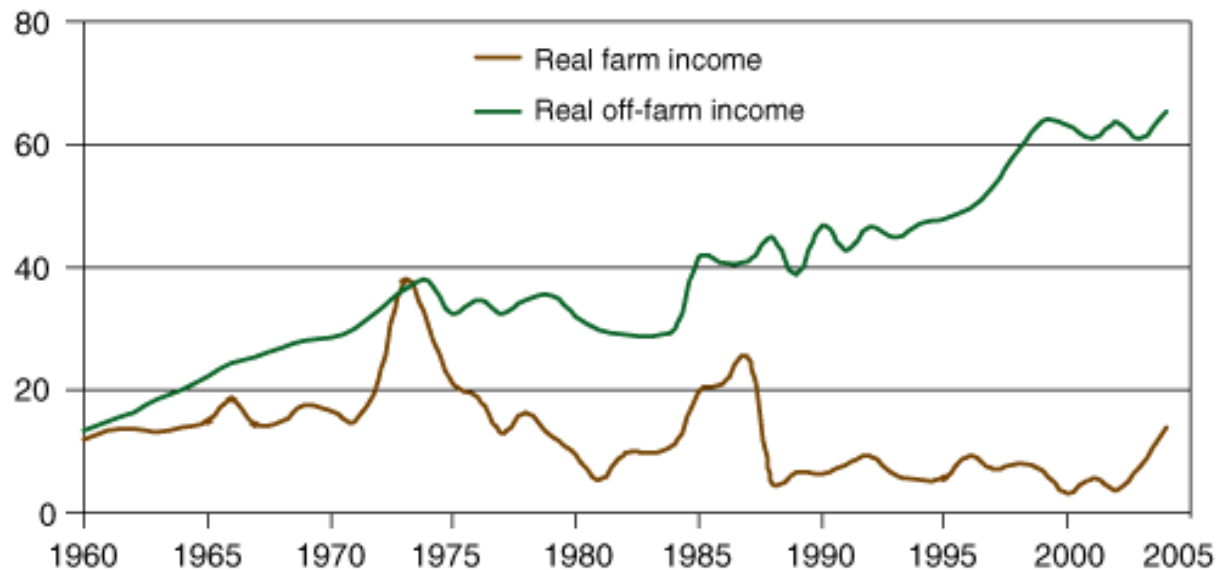


Income From Off-Farm Work

What is a big reason for off-farm work (besides income)?

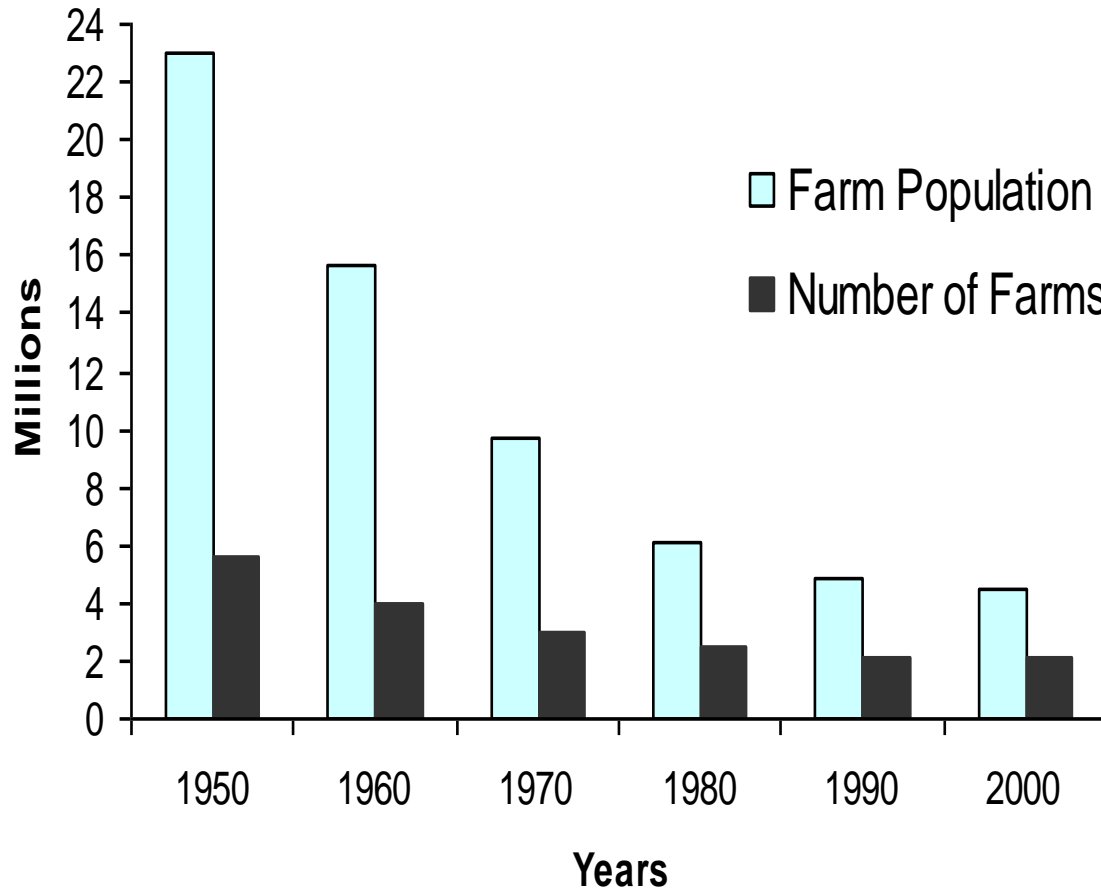
Off-farm household income has risen steadily

2003 dollars (thousands)



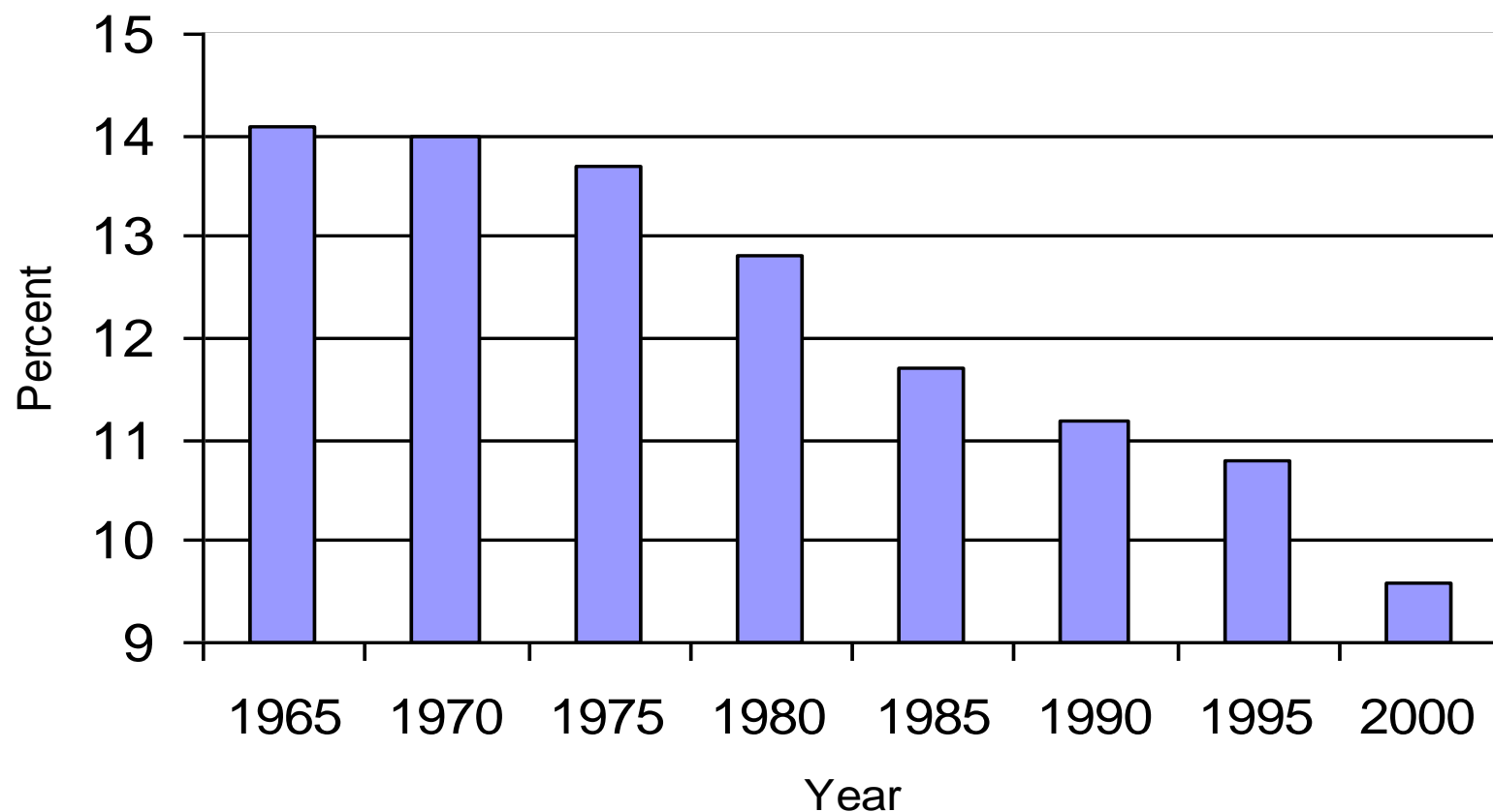
Sources: USDA, Economic Research Service. Deflator used to calculate real income is the Consumer Price Index (CPI-U) from the Bureau of Labor Statistics.

United States Farms



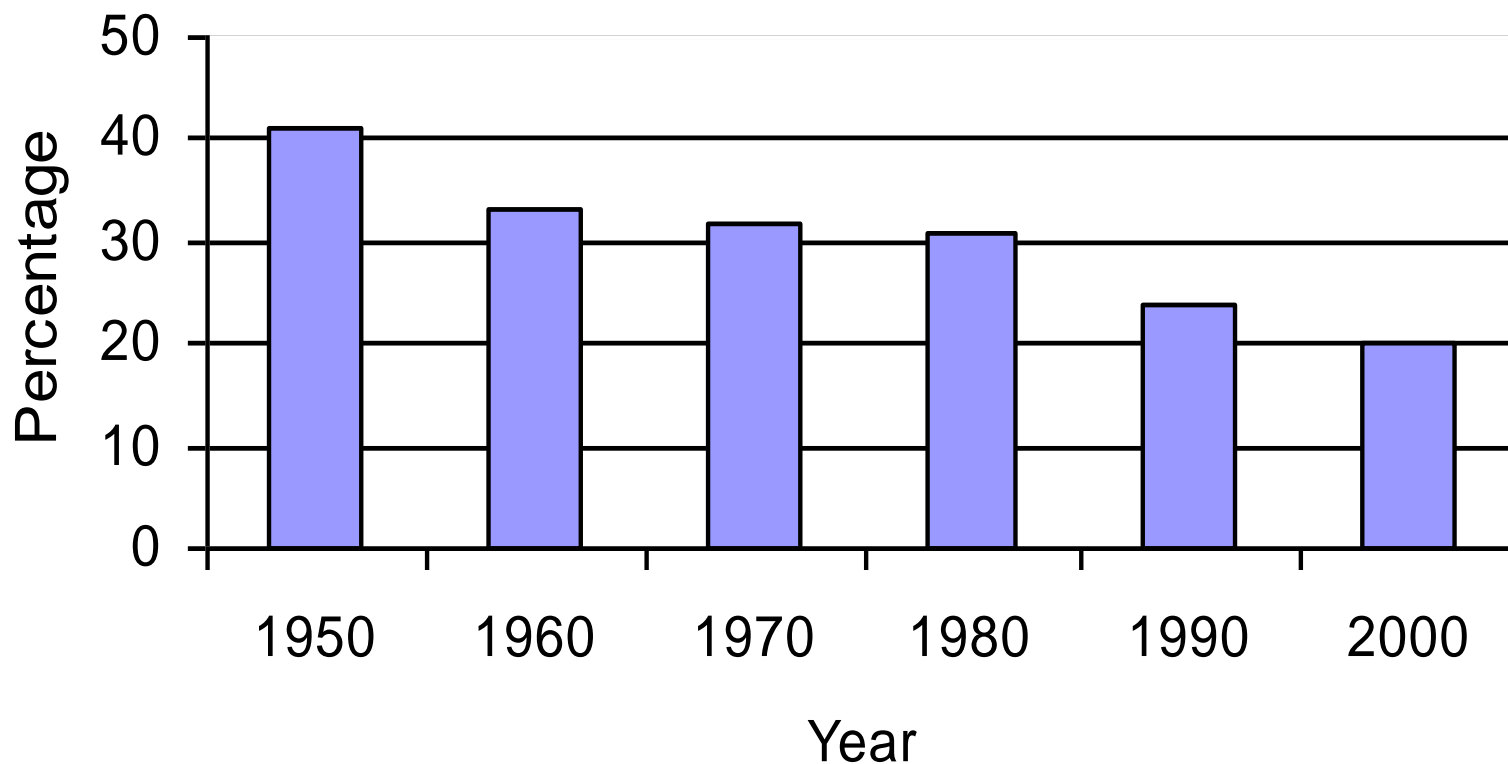
Source: USDA, National Agricultural Statistics Service, Farms and Land in Farms, February, 2001

Percent of GDP Spent on Nondurables/Food



Source: Economic Research Service, USDA

Farm Share of the Food Dollar



Source: USDA, Economic Research Service, Food Cost Review, 1950 – 97, Agricultural Economic Report No. 780 and Agricultural Outlook, September, 2001.

Top 8 Stressful Mega Trends in U.S. Agriculture

1. **New players as producers & consumers (Brazil, Argentina, China, India)**
2. **Changing trading policies (e.g. Tariffs)**
3. Foreign borne workers – immigration policy
4. Food security issues / agro-terrorism
5. Food safety issues – public health
 - a) Swine Flu, b) MRSA, c) E coli O 157, d) Salmonella
6. **Global climate change (Droughts, floods and wind)**
7. **Land availability (>60% of land farmed is rented)**
8. **Separation of people from the land**

1. Farm vs. non-farm
2. Large vs small
3. Not in my back yard
4. **STRESS**



Farm vs Urban/non-farm



The non-farmer

- Not in control of my environment
- Stress
- Lower property values
- Not in my back yard
- Nuisance
- Health problems
- We are 98% of the population, you are 2%

The Farmer

- We are producing food for the world
- We were here first
- Let us do our job
- Who feeds you – so that you can have your easy office job?
- \$84 billion industry in NC



What do we know?

- Health problems?
 - Hog farmers/workers
 - yes there are health risks
 - Good Management reduces risks
 - Neighbors ???
 - Exposures of toxic gases and dusts very low off the farm
 - Off Odors and stress can have physical symptoms.
 - Environmental Stress Syndrome
 - Property values lowered
 - Possible Nuisance
- Water Quality?
 - Not if good management
 - Not just confinement production

What Can We Do?

- Strive for Mutual Understanding and Respect
- Good Neighbor Practices
- Evidence-based policies
- The Certified Safe Farm Program
 - (a incentive-based total worker health)
 - Gold Star Producer Program
- Customer – market forces
- Urban must pay more for food
- Sell it on Economic and Sustainability



CHALLENGES TO IMPROVING FARM (in general) OCCUPATIONAL SAFETY AND HEALTH

- The Culture
- The Lack of farmers leading/promoting the issue
- The lack of OSHA enforcement
- Lack of trained and motivated and trained health and safety providers
- *Lack of a national comprehensive* incentive – based program

General Summary

- History and Back Ground
- Definitions
- Education in Agricultural Medicine
- Wellness and Occupational health status
- Ag structure and demographics
- Megatrends in Ag
- Special Populations
- Challenges
- Making it better. Inform, Energize, and Activate
- Multidisciplinary / Interdisciplinary / Comprehensive

What are we here for again?

Sustainable Farm Families = Sustainable Agriculture

“Helping to Keep Farm Families and workers Alive and Well”



Video – Discussions – Questions

References

- Donham, KJ and Thelin A. (2016). Agricultural Medicine: Rural Occupational and Environmental Health, Safety, and Prevention. Wiley and Sons, 2016.
- U.S. Department of Labor. (2017). National Agricultural Workers Survey.
- Fighting farm population. US News and World Report <https://www.usnews.com/news/healthiest-communities/articles/2018-07-02/fighting-hog-farm-pollution-in-north-carolina>

References

- Donham, KJ and Thelin A. (2016). Agricultural Medicine: Rural Occupational and Environmental Health, Safety, and Prevention. Wiley and Sons, 2016.
- U.S. Department of Labor. (2017). National Agricultural Workers Survey.
- Fighting farm population. US News and World Report <https://www.usnews.com/news/healthiest-communities/articles/2018-07-02/fighting-hog-farm-pollution-in-north-carolina>