

# **Innovate 2012**

## **Innovation: Funding the Future**

### **Public – Private Partnerships for**

#### **Strong Universities**

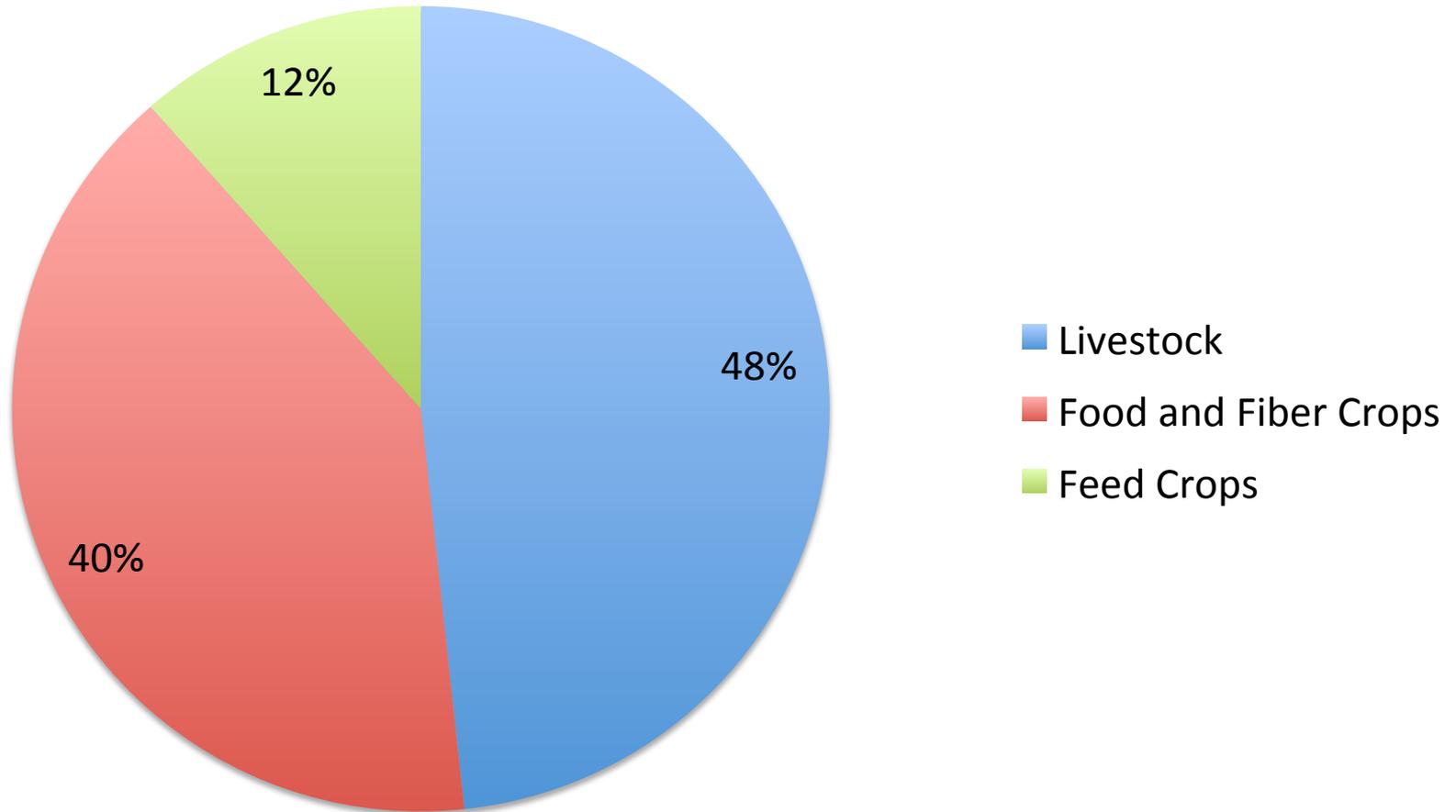
**Jeffrey D. Armstrong**  
**California Polytechnic State University**  
**October 3, 2012**

# Background / Outline

- Drop in productivity in US agriculture
- Animal vs plant agriculture
- Old model – looking back to 80's and 90's
- Potential Solutions

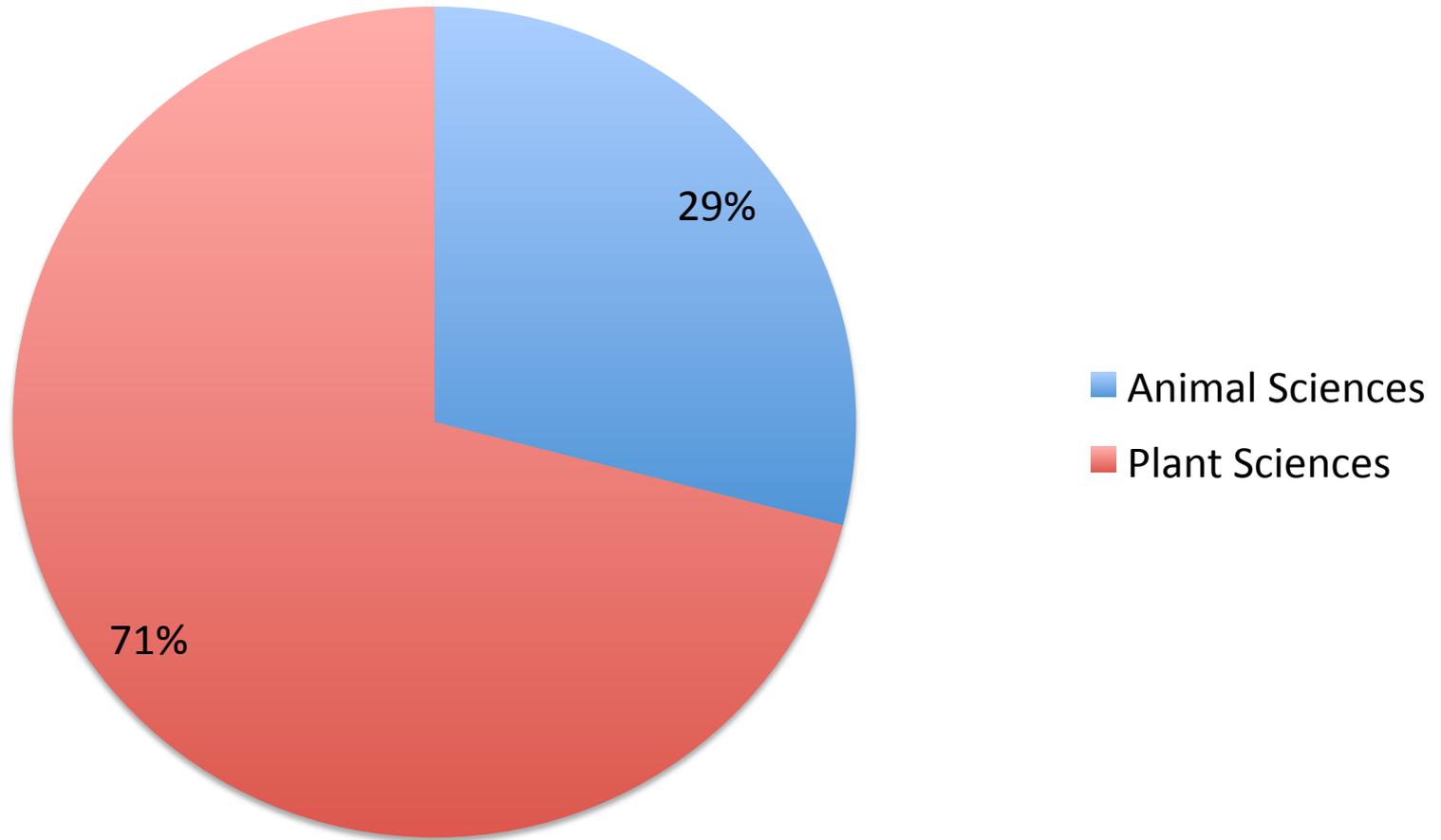
# NATIONAL AGRICULTURAL SALES RECEIPTS

1998 - 2010



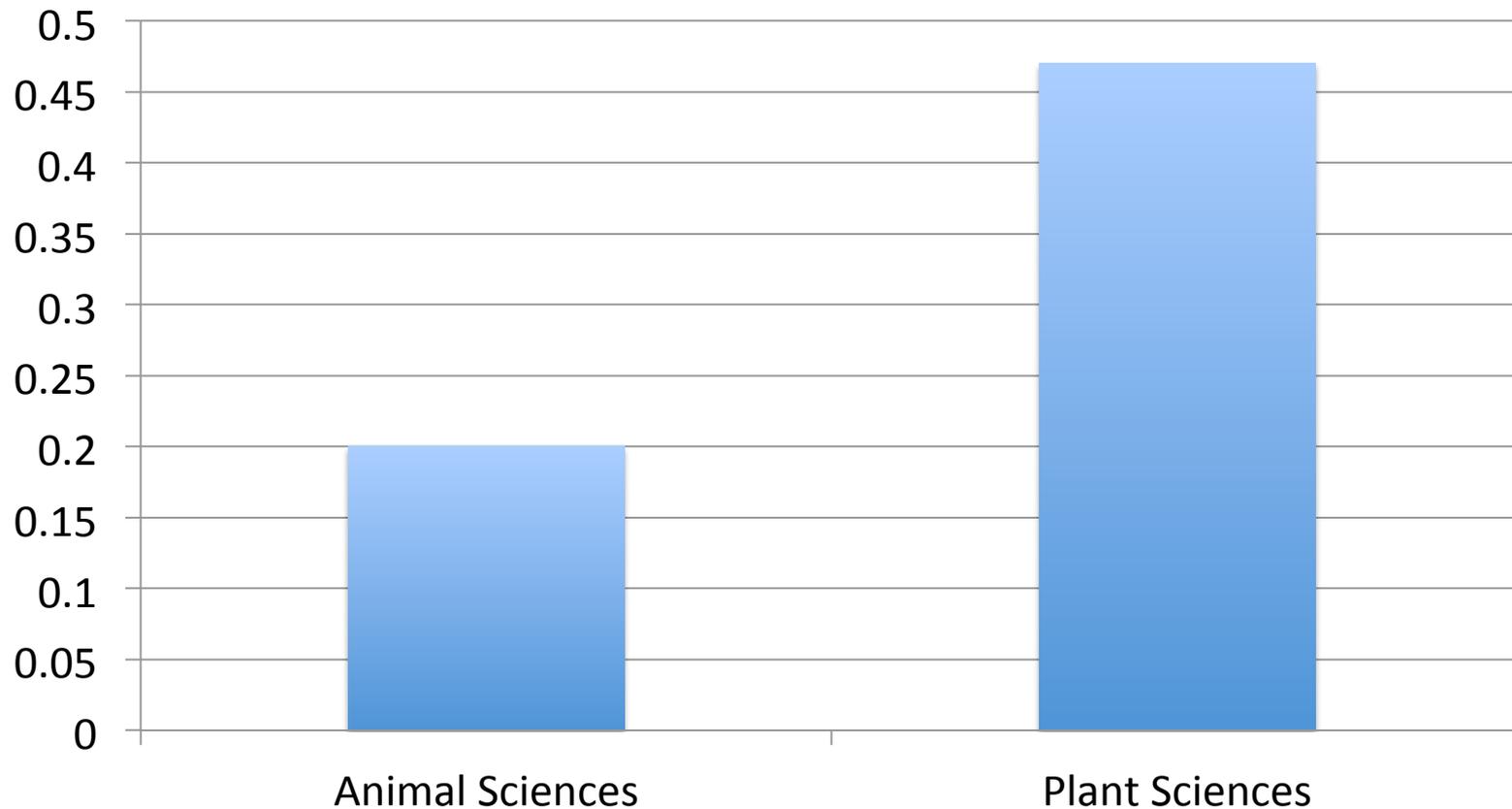
# USDA AGRICULTURAL RESEARCH FUNDING

1998 - 2010

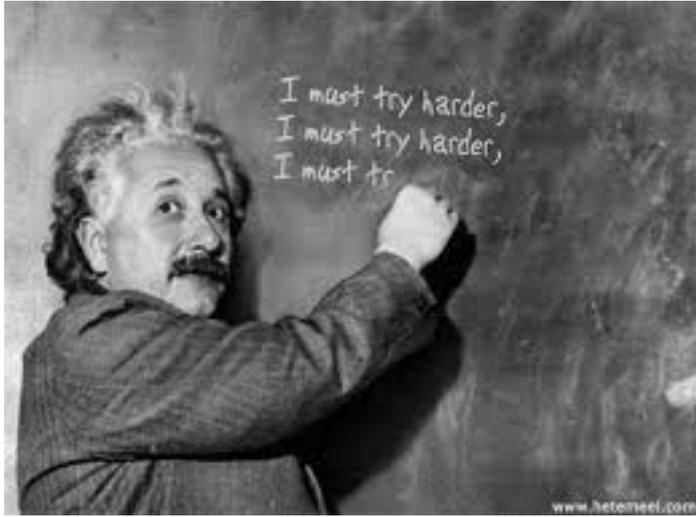


# USDA RESEARCH AND DEVELOPMENT FUNDING AS PERCENT REINVESTED INCOME

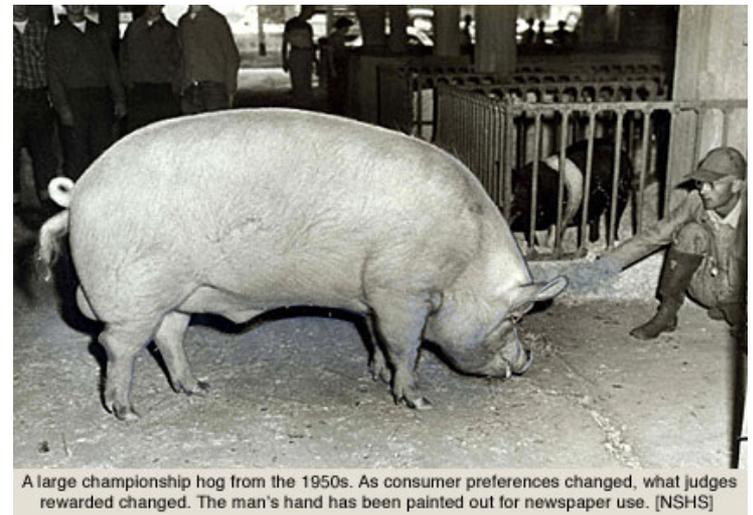
**1998-2010**



# Time Travel – Back to 50's to 90's and 2004



Dr. Clawson's Farm



**CAL POLY**  
SAN LUIS OBISPO

A large championship hog from the 1950s. As consumer preferences changed, what judges rewarded changed. The man's hand has been painted out for newspaper use. [NSHS]

# How Will Extension Be Funded in the Future?



Jeffrey D. Armstrong

July 28, 2004

# Potential Funding Sources

- Federal
  - Future farm bills
- State
  - Recent challenges / opportunities in Michigan
  - Find your Niche
    - Initiatives – general vs specific

# Potential Funding Sources

- Local
  - All politics are local
  - Balancing programming with political network
  - Balancing field and campus
- Entrepreneurial activity
  - Contracts and Grants
  - Fee for service
  - Educational programming
  - Partnering with industry
- Development (fund raising)

# Funding Sources: Prospects for the Future

- Federal
- State
- Local
- Entrepreneurial activity
- Development (fund raising)
- Flat to decreasing
- General – flat to decreasing
- Special – potential
- Volatile
- Good potential
- Good potential

# Animal, Dairy, Meat & Poultry Science Programs – Reality Check

- Animal-related stakeholders provide more political support than actual dollars for programs
  - Number of facilities and animals in the LG system
  - MSU – plant groups provide \$4 M per year (~\$2 M today plus GREEN – annually ~8-10 M; animal low)
  - Recent pressure on check-off programs and farm demographics exacerbate the problem
- End Result – inadequate support for ongoing, expensive programs

# NC State mid 80's – \$5 million



Michigan  
State mid  
90's – \$70  
million



# Do Our Livestock and Poultry Resources Exceed Our Needs?

## *Estimated Number of Livestock and Acres at LGUs\**

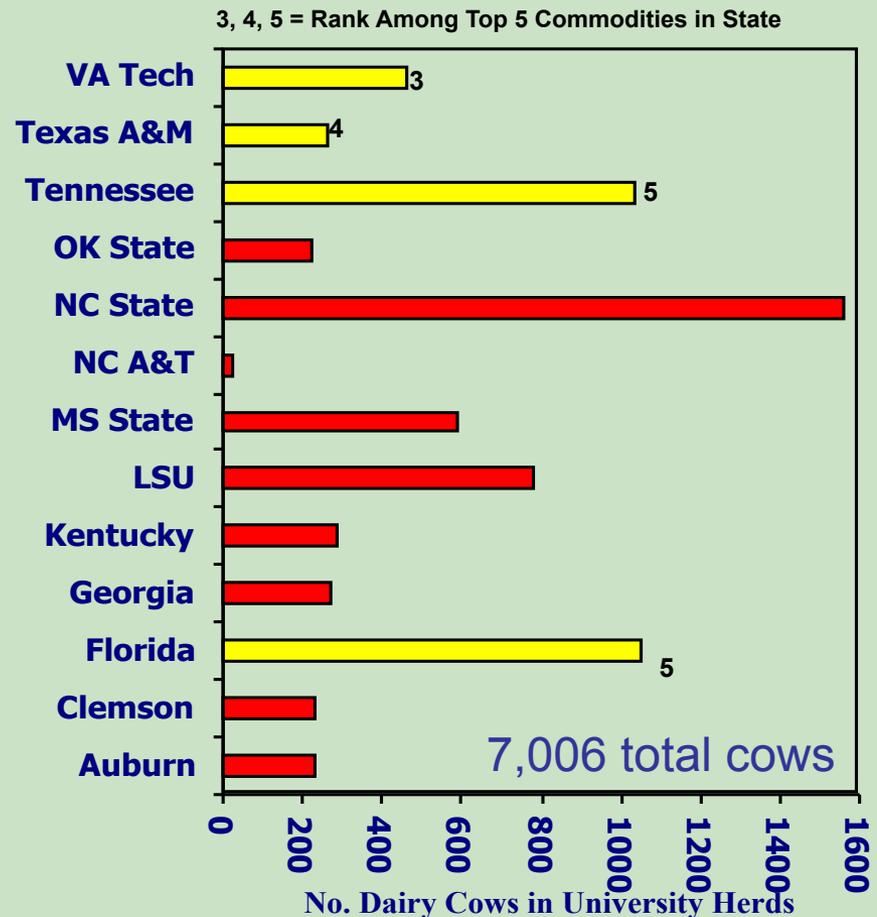
<b>Region:</b>	<b>NC</b>	<b>NE</b>	<b>S</b>	<b>W</b>	<b>Total</b>
Beef (Hd)	17,112	2,094	35,094	5,818	<b>60,118</b>
Dairy (Hd)	4,962	1,974	7,006	1,196	<b>15,138</b>
Hogs (Hd)	25,427	2,934	15,170	1,364	<b>44,895</b>
Chickens (Hd)	39,759	191,051	82,514	12,436	<b>325,760</b>
Horses (Hd)	355	252	1,678	829	<b>3,114</b>
Goats (Hd)	0	350	2,163	184	<b>2,697</b>
Sheep (Hd)	5,060	2,439	4,421	1,915	<b>13,835</b>
Cropland (Ac)	43,829	12,566	60,786	139,002	<b>256,183</b>
Pasture (Ac)	51,943	4,028	113,466	232,942	<b>402,379</b>
Forest (Ac)	6,939	46,257	134,284	6,844	<b>194,324</b>

**Source:** Animal and Facilities Survey Summary, University of Georgia, College of Agricultural and Environmental Sciences, Nov 21, 2002 (Dean Gale Buchanan).

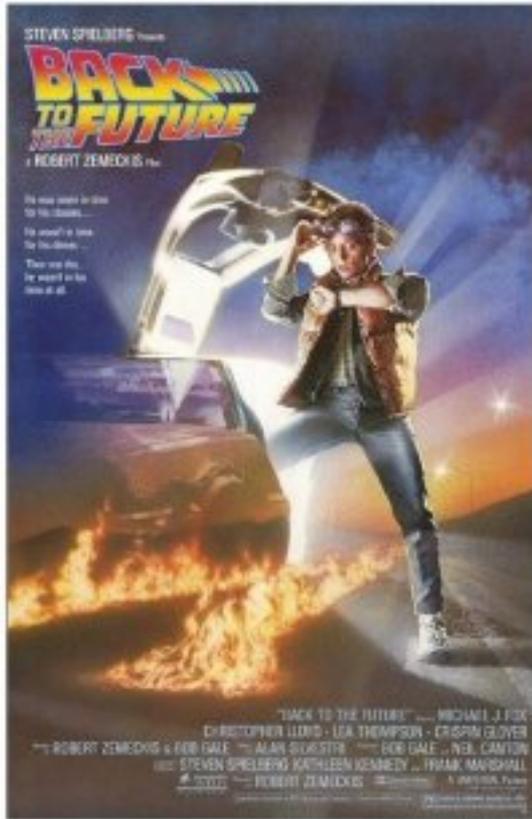
# Do Our Livestock and Poultry Resources Exceed Our Needs?

## Dairy Cattle in Southern Region

- LGUs in southern region all have dairy herds
- Dairy income is not among top five commodities in most states
- Would it be more efficient to collaborate in dairy teaching, research and extension?



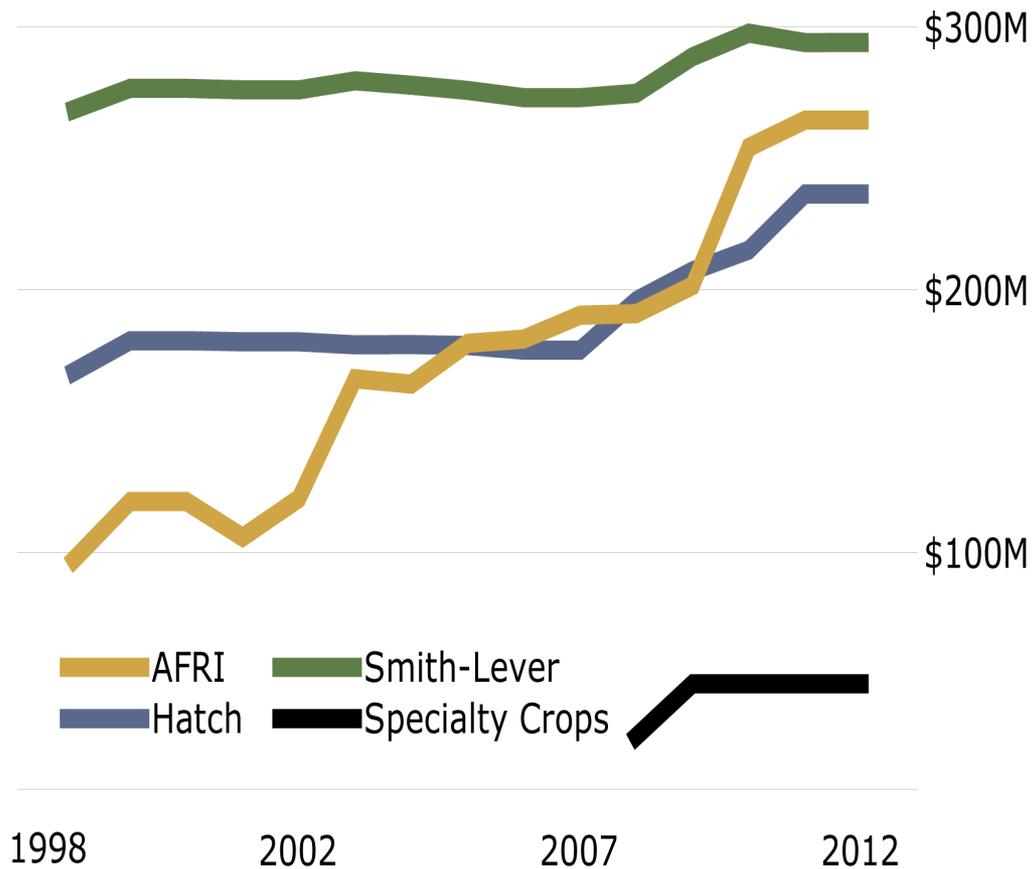
# Back to the Future



- Federal – last farm bill
  - Increase in competitive

# RECENT CHANGES IN NIFA FUNDING

## NIFA Funding Trends (Actual Dollars)



# Strawberry Farming in California

**2012 Acreage: 38,373**

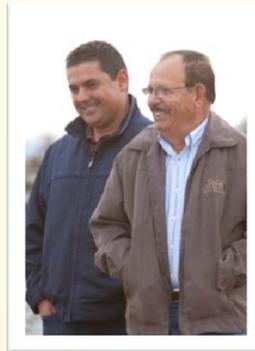
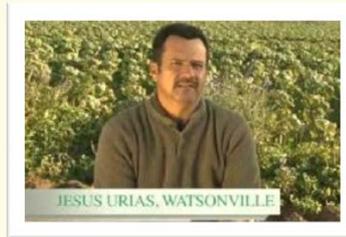
.005 ( ½ of a percent) of all California harvested cropland

**400 Family Farmers**

average farm size:  
95 acres

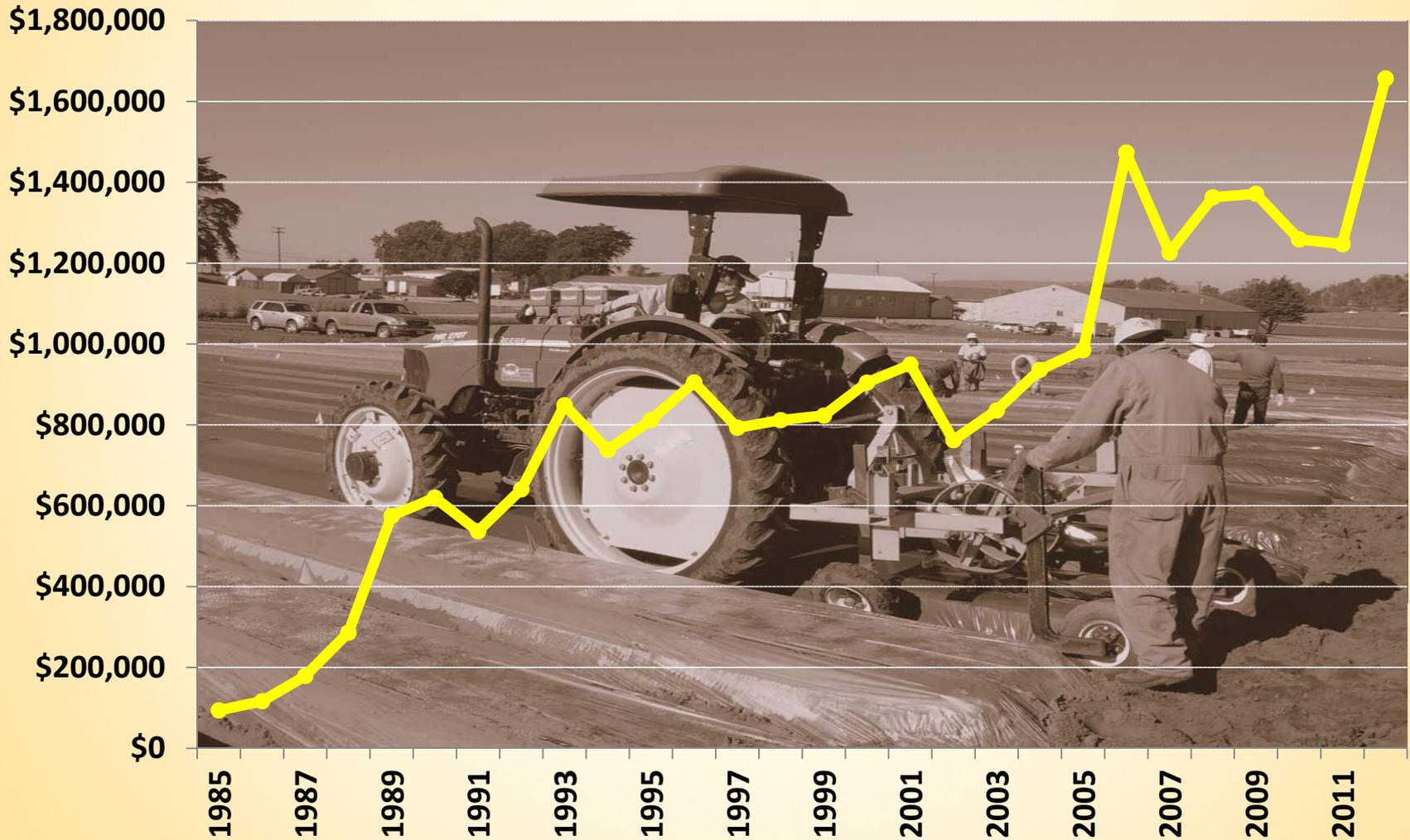
**53,000 on-farm jobs**

Creating 10% of California's  
Farm Jobs

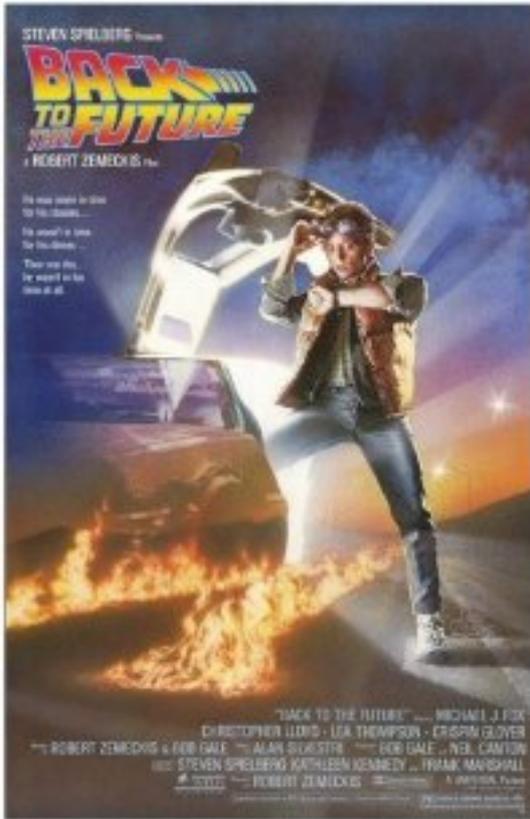




# Annual Production Research Funding

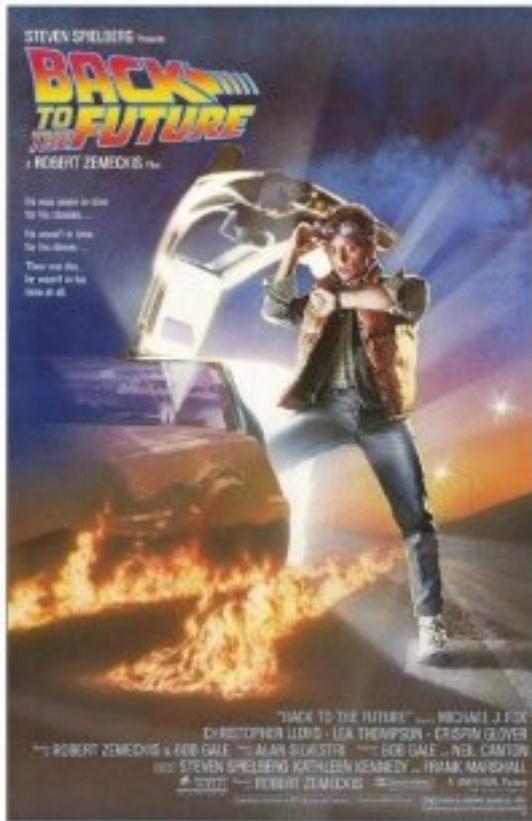


# Back to the Future



- Federal – last farm bill
  - Increase in competitive
  - Special grants / strategic funding / pork barrel – going, going, gone

# Back to the Future



- Federal – last farm bill
  - Increase in competitive
  - Special grants / strategic funding / pork barrel – going, going, gone
  - Limited progress in regional programming – especially from an infrastructure perspective

# Balance?

## Teaching and Applied Research

versus

(pressure for) Large (non-  
USDA) Grants

# Back to the Future

- Federal – last farm bill
  - Increase in competitive
  - Special grants / pork barrel – going, going, gone
- State
  - Loss of political / facility support
  - Devastating cuts

# Back to the Future

- Federal – last farm bill
  - Increase in competitive
  - Special grants / pork barrel – going, going, gone
- State
  - Loss of facility support AND devastating cuts
- **Industry response**
  - Compare to crops in general and specialty crops
  - Fighting among groups – research, education and extension NOT a federal or state priority?

# **A Common Global Goal - A Sustainable Food Supply / Industry**

- Environmentally & Ecologically (planet)
- Socially (people, ethics)
- Culturally (people, ethics)
- Economically (profit)

# McDonald's pressures hog industry to give up gestation crates, pork producers group objects

9:49 AM, Jun 1, 2012 | by Perry Beeman | Comments

Categories: [Enviroscribe: Iowa Environmental News](#), [Green Fields: Agriculture and Alternative Energy](#)

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A A



McDonald's has decided to force its pork suppliers to stop using gestation crates, within the decade. The crates are for one sow, and allow very little movement. Animal rights organizations have criticized them for decades.

Below is a response from the [National Pork Producers Council](#):

NPPC Disappointed With McDonald's Decision

Questions Remain About Effects On Pork Supplies, Costs, Farming



Paul Ryan in Clinton



Your Students, Your Schools In Johnston, Urbandale 10/5



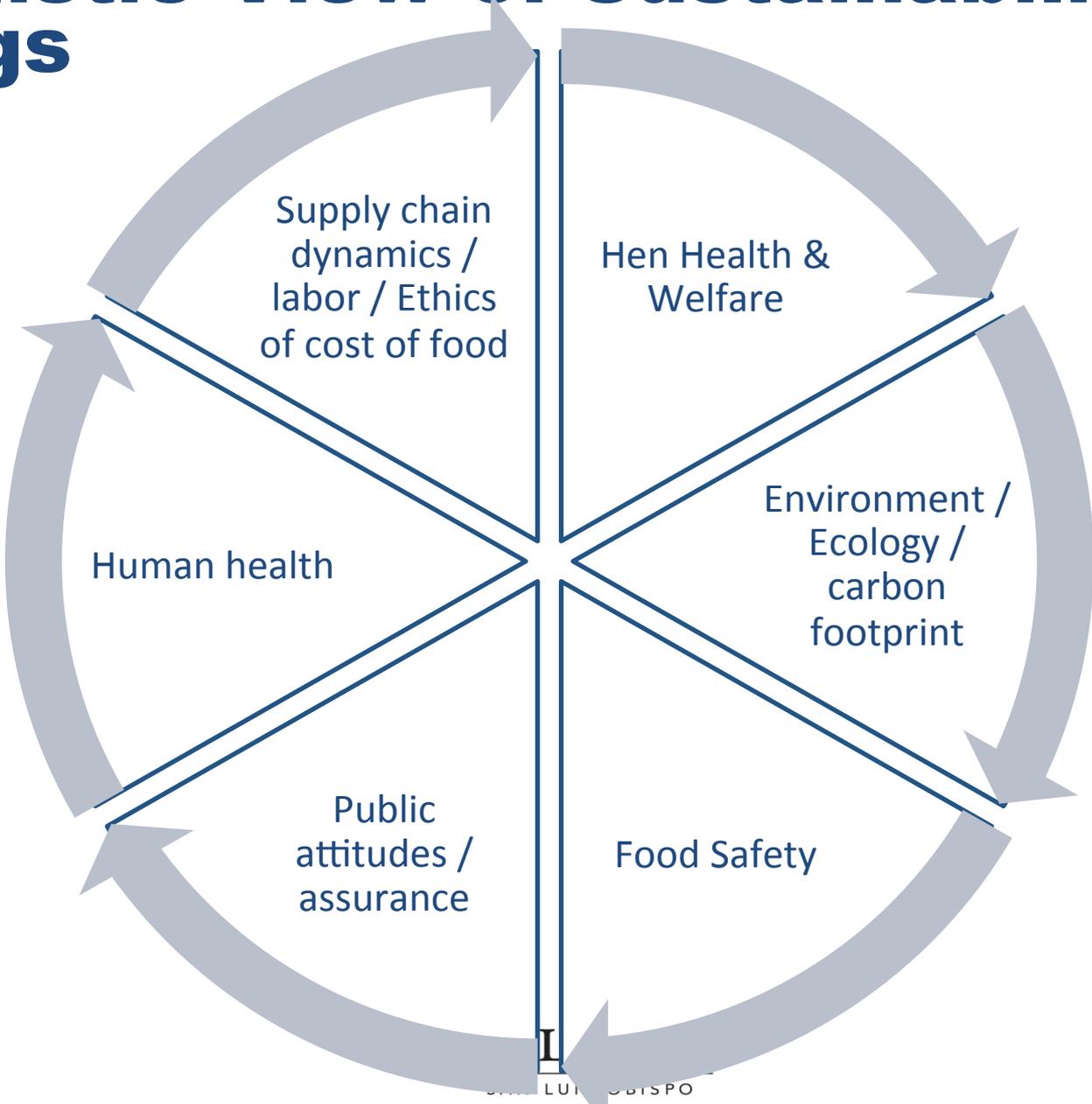
Your Students, Your Schools In Ankeny 10/5



art class at Phillips Traditional School



# Holistic View of Sustainability - Eggs





Conventional Cage System



Produced in Compliance with United Egg Producers' Animal Husbandry Guidelines

[www.uepcertified.com](http://www.uepcertified.com)



Cage-Free System

United Egg Producers  
Animal Husbandry  
Guidelines  
for U.S. Egg Laying Flocks  
2010 Edition

Copyright 2003 United Egg Producers All Rights Reserved



<http://www.uepcertified.com/media/pdf/UEP-Animal-Welfare-Guidelines.pdf>

# Guidelines for Laying Hens

---

- Developed by scientific committee
  - Accepted unanimously by UEP Board in 2000
  - Producers involved but non-voting
  - Cage and Non-cage guidelines developed
- UEP Producer Animal Welfare Committee
  - developed the phase-in periods for changes
  - developed “lay version” guidelines for producers
- Voluntary program (UEP Certified)
  - Labeling and assurance through audit mechanism
- Similar science or guidelines adopted by McDonalds, Burger King, the International Egg Commission and others

# Guidelines for Laying Hens

- BEFORE

- 48 – 54 sq in
- Molting – no feed for 14-21 days
- De-beaking – various ages
- Manure dropping on birds in lower cages
- Ammonia 50 ppm or higher

- AFTER

- 67 to 72 sq in
- Molting – feed withdrawal prohibited
- Beak trimming – less than 10 days of age
- Manure dropping on birds prohibited
- Ammonia - < 25 ppm

# UEP

## What if ... Pre-1998 Attitudes

- Fragmented industry
- Fragmented scientific community
- Multiple states with cage bans in place
  - Disparity between ballot and non-ballot states
- Social license equally fragmented
- Federal legislation banning cages – potential but may not be necessary
- End result – unsustainable situation headed toward non-cage as dominant source of eggs



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OF THE UNITED STATES**

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July 7, 2011

# HSUS, Egg Industry Agree to Promote Federal Standards for Hens

## Historic agreement sets new way forward; suspends ballot measures in Washington, Oregon



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TAKE ACTION

Historic legislation help hens: let's phase out battery cages!



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Published February 20, 2012, 11:03 AM



## UEP defends deal with HSUS

Will Wal-Mart-style marketing be the reason if a proposed standard on laying egg cages becomes part of the farm bill? Gene Gregory, president and CEO of United Egg Producers, says yes, eggs are a commodity and large producers that sell to big customers such as Wal-Mart need to move across state lines without a patchwork of rules.

By: [Mikkel Pates](#), Agweek

Will Wal-Mart-style marketing be the reason if a proposed standard on laying egg cages becomes federal law, and part of the farm bill?

Gene Gregory, president and CEO of United Egg Producers, says yes, eggs are a commodity and large producers that sell to big customers such as Wal-Mart need to move across state lines without a patchwork of rules. UEP has made a negotiated

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Dick Walsh Construction

# What Does The Egg Industry Get In This Deal?

- ▶ Stops all state legislation and ballot initiatives
- ▶ Clarified the standards for California, Michigan, Ohio, Oregon and Washington.
- ▶ HSUS accepted enriched colony housing.
- ▶ HSUS would stop lawsuits and undercover farm videos.
- ▶ Allows eggs to continue flowing across state lines,
- ▶ Time to use existing conventional cages.
- ▶ Allows a phase-in schedule that avoids market disruptions.
- ▶ Allow a phase-in that will assist with cost averaging and therefore major price increases for consumers.

## Dr. Jeff Armstrong's Comments

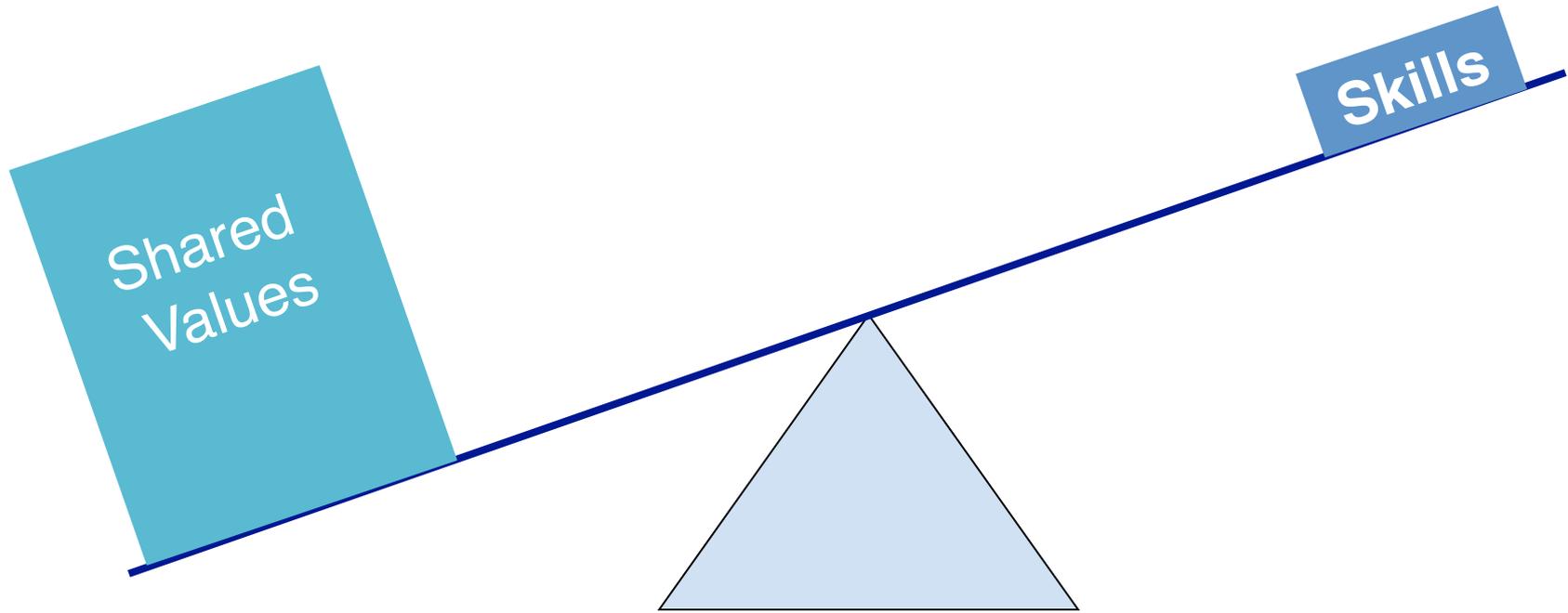
- ▶ *Recognition that factors beyond science are at play such as economics, social contract/license and holistic approach to sustainability.*
- ▶ *Pathway for saving cages are limited, science behind enriched cages is solid.*
- ▶ *Multiple states with cage bans could lead to an unsustainable situation headed toward non-cage as the dominate source of eggs.*
- ▶ *UEP may have put forth the best deal possible in resolving the conflict with HSUS.*

# UEP

## A leader in agriculture

- Consistent focus on science
- Recognition that science is fluid – changes as we learn more
  - E.g. molting, feeder space, ammonia
- Recognition that factors beyond science are at play
  - Economics
  - Social contract / license
  - Holistic approach to sustainability
- (largely) unified in actions and approach

# What Drives Consumer Trust?



Shared values are 3-5X more important in building trust than demonstrating competence

Trust research was published in December, 2009 – *Journal of Rural Sociology*

# What Drives Consumer Trust?



Shared  
Values

skills

National Standards  
necessary to re-adjust  
“tipping point” – show  
values

Shared values are 3-5X more important in building trust  
than demonstrating competence

Trust research was published in December, 2009 – *Journal of Rural Sociology*

Back to 80's, 90's and  
2004

# Animal, Dairy, Meat & Poultry Science Programs – Solutions

Not the traditional funding – changes to the farm bill that promote partnerships and leveraging resources

- Balance in programs
  - Basic vs applied
  - Farm demographics
    - MI – increase in number of small farms and loss in the middle
    - Which programs are we geared to serve?
    - Are our programs sustainable?

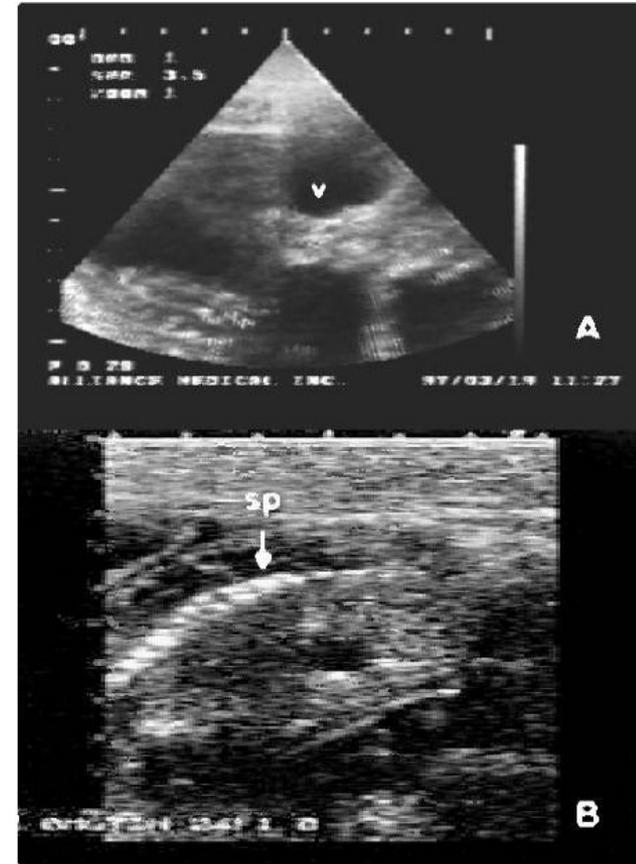
# Additional Solutions

# Solutions: Enhanced Partnerships

- Previous partnerships focused on building on a state (and some extent federally) supported infrastructure
  - New partnerships –
    - Long term (including large farms)
    - Recognizing the need for stability on both sides
    - Bring together long term need for talent, continuing education and applied research

# Solutions: Enhanced Partnerships

- A nugget from the 1990's
  - NC Pork Producers – Ag and Vet colleges
    - Previous partnership – \$20-40k grants
    - New – enhanced partnership with focused investment (\$150 k grant)
    - Result – adoption of real-time ultrasound





**CAL POLY**  
SAN LUIS OBISPO

# Solutions: Increase Philanthropy

## Cal Poly - Leprino Partnership

- Fall 2013 Implement Master of Professional Studies in Dairy Products Technology
  - Grow to 40 students
- Multi-Use expansion to the Leprino Foods Dairy Innovation Institute
  - 7 research labs
  - 3 teaching labs
  - Larger auditorium and more offices
  - Production and pilot plant space expansion
- Current campaign target - \$20 million

# Solutions: Increase Philanthropy

- Cal Poly: J & G Lau Family Meat Processing Center; Animal Nutrition Center

- \$8.25 of 10.1 m through development



# Solutions: Increase Philanthropy

- Michigan State University Laying Hen Research Facility
  - \$1.4 of ~1.8 m through development



# Solutions: New Partnerships

- Washington State apple growers invest \$27 million research and extension at WSU over next 8 years.



# Solutions: New Partnerships

- Coalition for Sustainable Egg Supply awarded \$6 million to MSU and UC Davis to support:
  - CSES Laying Hen Housing Research Project





Coalition for Sustainable Egg Supply

# Coalition for Sustainable Egg Supply

# Coalition for Sustainable Egg Supply



- **Comprised of leading scientists, research institutions, non-governmental organizations, egg suppliers, food manufacturers, restaurant/foodservice and food retail companies. Leadership team:**
  - Research: Michigan State University and University of California, Davis
  - Egg Supplier: Cargill Kitchen Solutions, Inc.
  - Food Retailer: McDonald's USA, LLC
  - Animal Well-Being: American Humane Association
  - Facilitator: Center for Food Integrity
  - Member advisors: American Veterinary Medical Association, USDA Agricultural Research Service
  - Non-Member Advisor: Environmental Defense Fund
- **Conducting commercial-scale research to generate data that will allow food system stakeholders to make informed, independent decisions.**

# CSES Research Overview



## Three types of hen housing systems are being evaluated

- Conventional cage system
- Enriched colony system
- Cage-free aviary

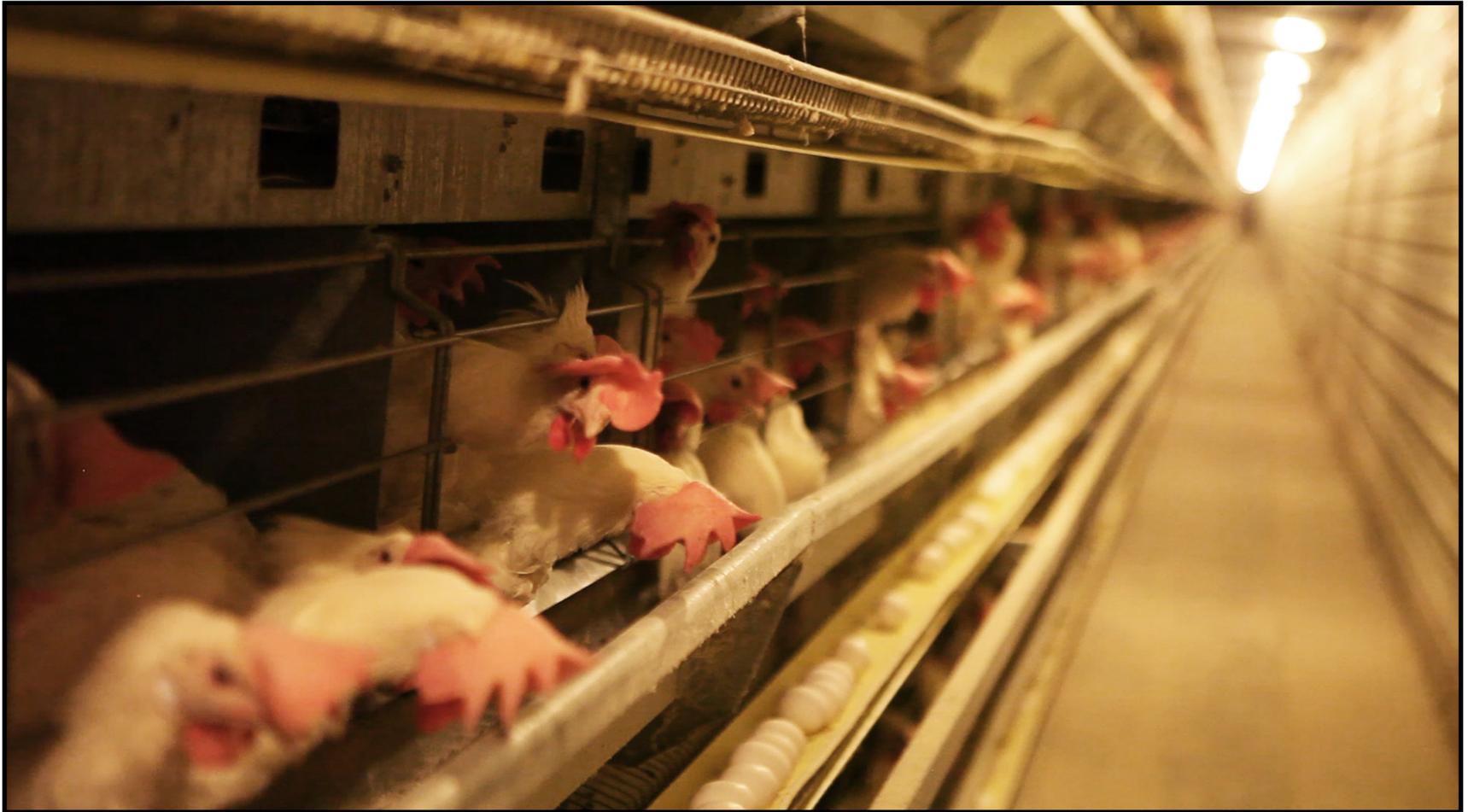
## Across five sustainability factors:

- Environmental Impact
- Food Safety
- Worker Safety
- Animal Health and Well-Being
- Food Affordability

# Conventional Housing



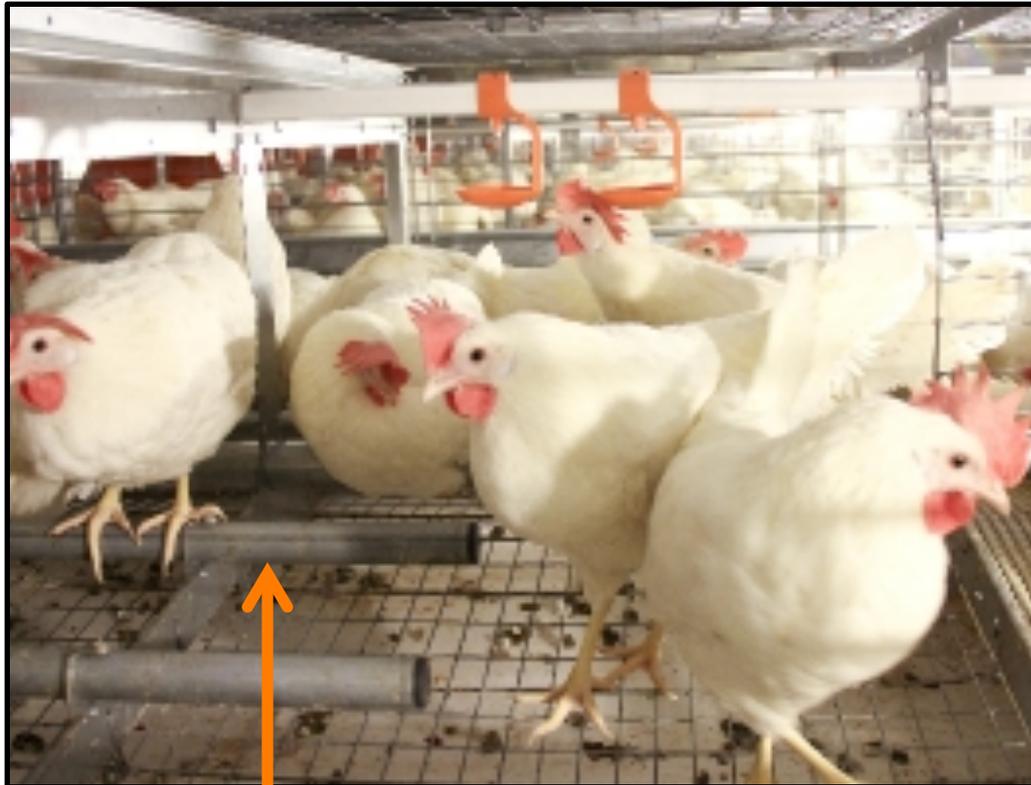
Coalition for Sustainable Egg Supply



# Enriched Colony Housing



Coalition for Sustainable Egg Supply



Perch



Nest box



Scratch area

# Aviary Housing



Coalition for Sustainable Egg Supply



# Research Timeline



Coalition for Sustainable Egg Supply

- **Construction and Early Research**
  - Some research began in November 2010 with baby chicks and hatchery
  - Construction of commercial scale aviary and enriched cage facilities completed April 2011
- **Flock Placements and Research**
  - First research flocks were placed in April 2011
  - Second research flocks were placed in June 2012
- **Completion and Results**
  - Study complete in 2014
  - Preliminary report early 2015

# Back to 2004

# Conclusions

- Funding and Programming are intimately linked
  - Being viewed as essential to enhancing economic development and quality of life is essential
    - Quality, Relevance, Focus and Balance
    - View – local, state and federal (international)
  - Be the place to go for \_\_\_\_\_; be early adopters.
- We cannot expect to be early adopters if we are trying to adopt everything!

# Conclusions

- Work within your own unique settings to develop new funding streams
  - Look for opportunities
    - Today's examples – cheese, WSU and apples

# Conclusions

- “Coop-etition” must take root in a new way!
- Each “system / state / area” must make decisions on the presence and amount of subsidization
- Enhanced partnerships
- Build fee based programs where appropriate
- Find the BHAG that is appropriate for your state / system / commodity group

# Conclusions

- Animal housing and other processes / practices will continue to evolve
- Research, education and Extension programs must grow and adapt to holistic approach
  - Includes need for new facilities and / or new partnerships (large facilities near campus)

# Summary

- 2004 conclusions hold solid today!
  - Real planning and action across university borders that result in new partnerships and leverage
  - Will likely require industry action / farm bill, etc.
- Consequently, bold leadership from industry and academia is required to break the log jam

Questions / Discussion?