Protecting and educating consumers through new, innovative technologies

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Modern Extension

@ the Research x Extension Nexus

- Advances culture of innovation
- Identifies and serves emerging audiences
- Shifts from learners-consumers to learners-creators
NIFA Integrated Projects

@ the Research x Extension Nexus

• Food processing technologies
• Effective mitigation of antimicrobial resistance
• Pollinator health
• Breeding and phenomics
• Water for food production systems
• Methyl bromide transition
• STEC in beef
• *Campylobacter* and *Salmonella* in poultry
Campylobacter in Poultry
Education interventions

• Unaware of *Campylobacter*
  – 92.5% of consumers
  – 28% of poultry industry workers

• Used theory of planned behavior to impact behavioral change
  – Social media vs traditional extension

S. Illic, OSU, unpublished
On farm practices and risk factors for *Campylobacter*

- Feed conversion, paw burn and *Campylobacter* prevalence correlate

O. Sahin, Iowa State, *unpublished*
Litter amendments eliminate *Campylobacter*

G. Rajashekar, OSU, unpublished data
Efficacious recombinant vaccine

- Vaccine reduced *Campylobacter* load by 100-10,000 CFU/g feces

B. Law, U of Arizona, *unpublished*
Novel anti-\textit{Campylobacter} compounds identified

Kumar et al., 2016. Frontiers Microbiol 7:405
Effective post-harvest interventions reduce *Campylobacter* load

- Timing of feed withdrawal is critical
- Multi-stage or hard carcass scald  
  - up to 4 log reduction
- Air vs water chilling
- Blast chilling or crust freezing  
  - up to 1.5 log reduction
Science-Based Messages to Improve Storage, Handling, and Preparation of Poultry

• Cookbook instructions increase food safety behaviors 82-94%
• 64% of youth share food safety information with parents
• Type of kitchen lighting impacts visual perception of meat doneness
**Center for Public Issues Education**
In Agriculture and Natural Resources

**“I am responsible for my own food safety”**

- **68%** Agree
- **12%** Disagree
- **20%** Neither

**“To ensure food safety, I often or always...”**

- **91%** Wash fruits & veggies before eating
- **35%** Peel fruits & veggies
- **61%** Read food safety information
- **70%** Disinfect counters
- **93%** Wash hands before food prep
- **84%** Wash hands before eating
- **43%** Use a meat thermometer
- **58%** Defrost food in the microwave
- **89%** Look for expiration dates

**Floridians hunger for food safety**

- **42%** Agree
- **29%** Disagree
- **29%** Neither

**“Food safety is a major concern of mine”**

- **16%** Are worried about food prepared in their kitchen
- **49%** Are worried about food when eating out

**Of people learned about proper safe handling of food from their parents**

- **68%**

**While only**

- **24%**

**Of people learned about proper safe handling of food from scientists**

- **49%**
NIFA invests along the chain of innovation