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Protecting and educating consumers through new, innovative technologies

Max Teplitski

National Program Leader in Food Safety

USDA NIFA

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





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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

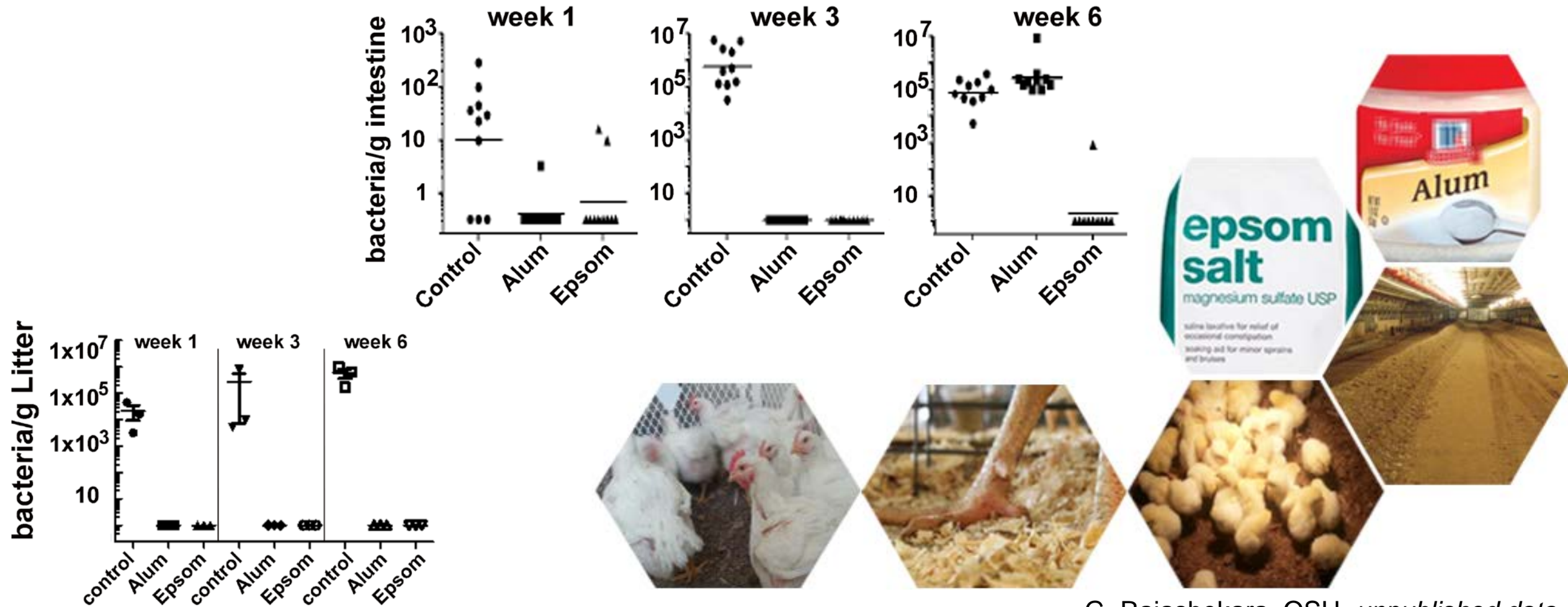


On farm practices and risk factors for *Campylobacter*

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



Litter amendments eliminate *Campylobacter*

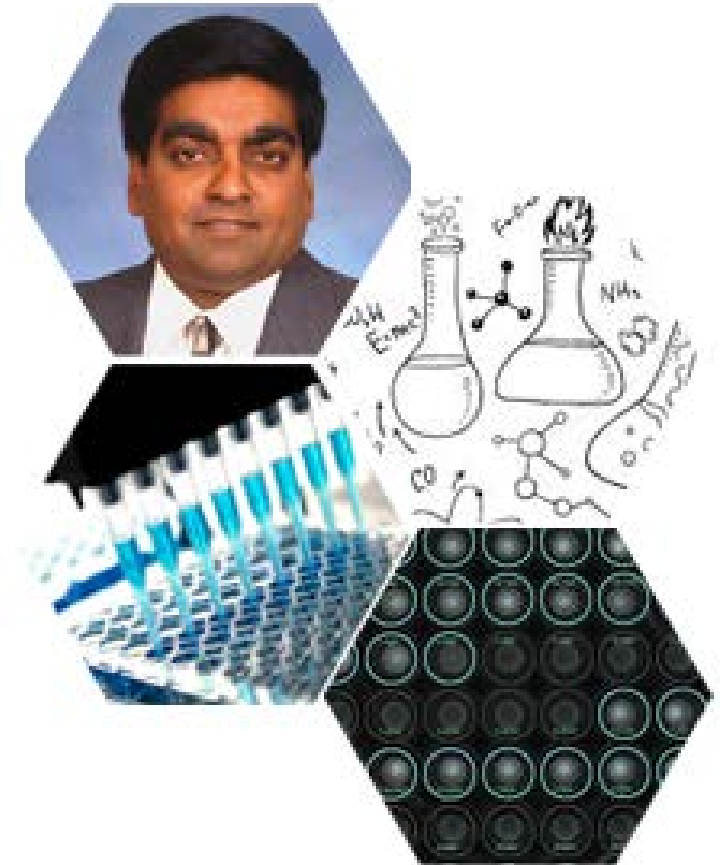
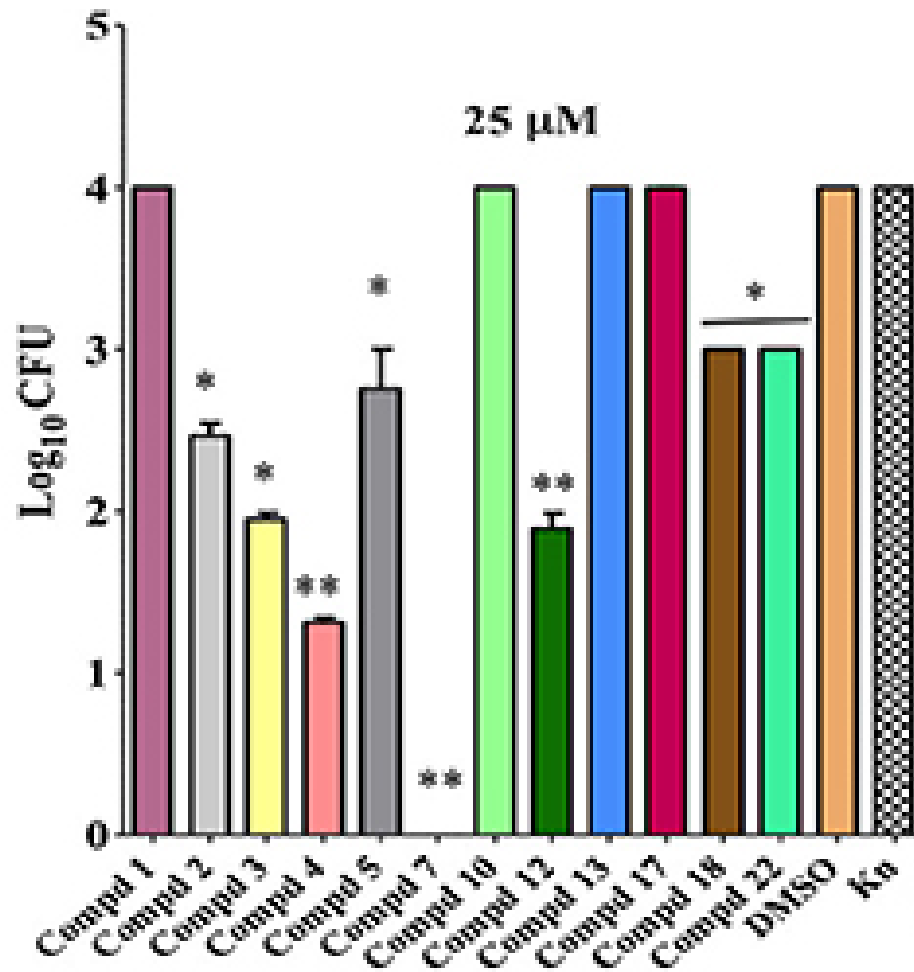


Efficacious recombinant vaccine



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

Novel anti-*Campylobacter* compounds identified



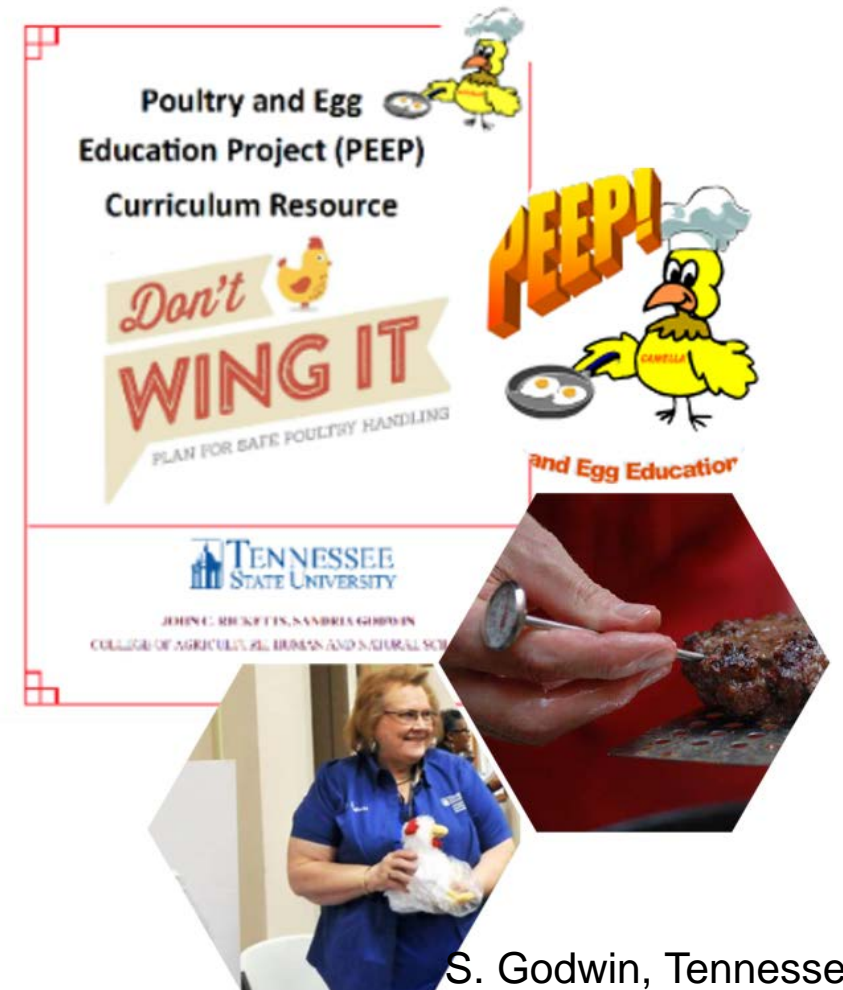
Effective post-harvest interventions reduce *Campylobacter* load

- 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

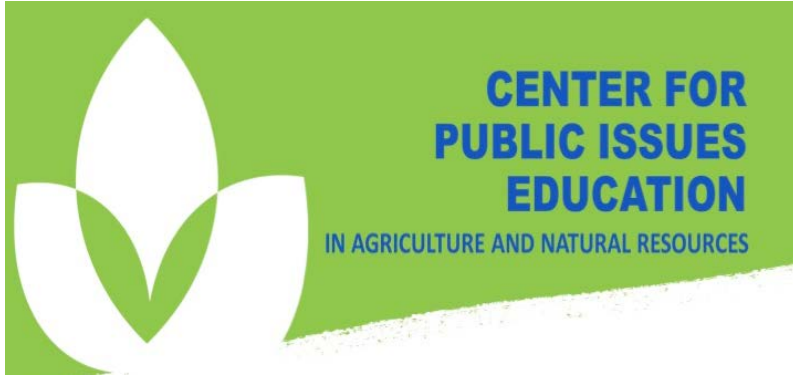




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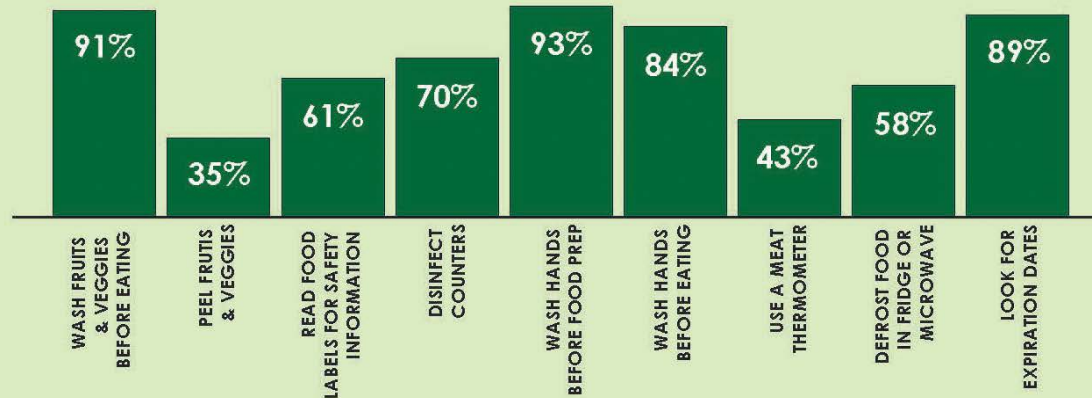
"I AM RESPONSIBLE FOR MY OWN FOOD SAFETY"

68%
AGREE

12%
DISAGREE

20%
NEITHER

"TO ENSURE FOOD SAFETY, I OFTEN OR ALWAYS..."



**FLORIDIANS HUNGER
FOR FOOD SAFETY**

"FOOD SAFETY IS A MAJOR CONCERN OF MINE"

42%
AGREE

29%
DISAGREE

29%
NEITHER

68%

WHILE ONLY

24%

OF PEOPLE LEARNED ABOUT PROPER
SAFE HANDLING OF FOOD FROM
THEIR PARENTS

OF PEOPLE LEARNED ABOUT PROPER
SAFE HANDLING OF FOOD FROM
SCIENTISTS



ARE WORRIED ABOUT FOOD
PREPARED IN THEIR KITCHEN



ARE WORRIED ABOUT
FOOD WHEN EATING OUT



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NIFA invests along the chain of innovation

