

## Appendices A&B Research

The Foundation issued a mini request for proposals to fill the data gaps in response to the Food Safety and Inspection Service's revised Appendices A and B, issued in June 2017.

The revised Appendices A and B provide safe harbor guidelines for ready-to-eat (RTE) meat and poultry processors. Appendix A was designed to help meat and poultry processors meet lethality requirements in RTE products and Appendix B was designed to assist processors meet the cooling and stabilization requirements for heat-treated and RTE and non-RTE products. The revised Appendices highlighted immediate research needs prior to FSIS enforcement on March 22, 2019.

This mini RFP was conducted on an expedited review and research timeline to ensure findings are available to the industry prior to the enforcement date. In July, the Foundation Board of Directors approved three research projects to address these priorities:

### Effects of Product Moisture and Process Humidity on Pathogen Lethality during Continuous Cooking of Meat and Poultry Products

*Michigan State University*

The overall goal of the project is to provide supporting scientific evidence to document compliance with Appendix A, particularly with respect to the impact of process humidity on *Salmonella* lethality in high-temperature, short-time cooking processes. Research will be conducted using beef patties; restructured chicken patties; breaded, chicken nuggets; whole-muscle chicken breasts; and whole-muscle steak strips.

### Development and Validation of Dynamic Predictive Models for Growth and Toxin Formation by *Staphylococcus aureus* in Low Temperature Cooked Products

*University of Georgia*

The overall project goal is to develop and validate predictive models for growth and toxin formation of *Staphylococcus aureus* in uncured roast beef, bacon and hams.

### Validating growth models for *Clostridium perfringens*, *Clostridium botulinum*, and *Bacillus cereus* during cooling of uncured meat and poultry products

*University of Wisconsin*

This project will develop data to determine the validity of the revised Option 2 cooling guidelines for uncured meat products, specifically to determine if Phase 1 cooling (from 120 to 80°F) can be extended from the currently outlined 1 hour limit. An uncured turkey breast meat will be used in the model.

Signifying the importance of this research, these projects are jointly funded among several organizations. The Foundation is grateful for the support of the Beef Checkoff, Beef Industry Food Safety Council and the U.S. Poultry and Egg Association.

#### Effects of Product Moisture and Process Humidity on Pathogen Lethality during Continuous Cooking of Meat and Poultry Products

*Michigan State University*

Jointly funded by



#### Development and Validation of Dynamic Predictive Models for Growth and Toxin Formation by *Staphylococcus aureus* in Low Temperature Cooked Products

*University of Georgia*

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#### Validating growth models for *Clostridium perfringens*, *Clostridium botulinum*, and *Bacillus cereus* during cooling of uncured meat and poultry products

*University of Wisconsin*

Jointly funded by



## Request for Proposals Issued in August on Key Topics

The Foundation issued its 2018-2019 Request for Proposals in August. Proposals were solicited on the following topics:

### Food Safety

- Use whole genome sequencing and other emerging technologies to evaluate the genetic factors allowing bacterial pathogens (STEC, *Salmonella* and/or *Listeria*) to live and thrive in processing environments, on food contact surfaces and/or on products. Research should include how these pathogens survive, and how the environmental and genetic factors influence virulence.
- What factors should you consider when evaluating regulatory whole genome sequenced isolates, *e.g.* type of pathogen; relatedness of sequences; in plant location of pathogen; potential for harborage or continual reintroduction, what can be learned?, among other factors.
- Identify and validate interventions to inhibit STEC on pork including carcasses, primals, trim and ground product. Interventions should be approved for use in the U.S.
- Identify and validate interventions and novel application methods to reduce pathogen contamination of beef and pork head or cheek meat. Interventions should be approved for use in the U.S.
- Identify and validate interventions and novel application methods to reduce pathogen contamination of poultry parts. Interventions should be approved for use in the U.S.
- Identify and validate antimicrobial interventions to reduce pathogen contamination of beef edible variety meats intended for use in ground products. Interventions should be approved for use in the U.S. and ideally the major export markets for the specific variety meats.
- Investigate efficient and sustainable application of antimicrobials to reduce pathogens on meat and poultry carcasses as well as primals and parts. The proposals should evaluate:
  - Water reduction and reuse, specifically efficacy during treatment period;
  - Reuse of antimicrobial treatments, specifically efficacy during “lifespan” of reuse treatment, including decay rate of efficacy; and
  - Type of application--both existing and novel technology.
- Evaluate commonly used antimicrobial interventions at and above current regulatory level of water pick up, *e.g.* above the 0.49%, to determine if efficacy is improved with usage above the processing aid threshold.

### Product Quality

- Evaluate the effect of different interventions alone or in combination with different types of packaging methods on the microbial ecology of different products in relation to storage life, discoloration and product quality.
- Evaluate methods and mitigation strategies to control and measure sporeformers on raw products prior to packaging to minimize or eliminate adverse quality outcomes like discoloration and blown bags.

### Nutritional Sciences

- Conduct menu modeling and other analyses to demonstrate that fresh and processed meat and poultry items can be a component of the dietary patterns recommended by the *Dietary Guidelines for Americans*.
- Risk-benefit analysis on the consumption of fresh and processed meat and poultry products as a component of a healthy diet and lifestyle.

Proposal reviews are underway. Research recommended for funding will be presented the Foundation Board of Directors in January 2019.

## Beef Board Grants Foundation Research Funding

The Cattlemen's Beef Promotion and Research Board approved \$800,000 in funding to the Foundation for Meat and Poultry Research and Education, a contractor to the Beef Checkoff, for post-harvest beef safety and processed beef nutrition research to be administered by the Foundation in Fiscal Year 2019. The Foundation has served as a contractor for post-harvest beef safety for several years. This is the first year the Foundation has received funding for processed beef nutrition research. Being a contractor provides an opportunity to leverage resources and co-fund research when appropriate.

Post-harvest beef safety research priorities include: Antimicrobial interventions for use on fresh meats, variety meats, head and cheek meat, enhanced and ready-to-eat (RTE) products; a review of factors for the beef industry to consider when evaluating regulatory whole genome sequenced isolates; and strategies for mitigating beef contamination or adulteration from non-pathogenic hazards, *e.g.* allergens, foreign materials, in a post-harvest commercial facility or supply chain environment.

Processed beef nutrition research priorities include: menu modeling and other analyses to demonstrate that processed beef items can be a component of dietary patterns recommended by the *Dietary Guidelines for Americans*; white paper(s) to assess what is currently known and any potential data gaps on the mechanistic development of cancer in humans for processed beef product components; and risk-benefit analysis on the consumption of processed beef products as a component of a healthy diet and lifestyle. Additionally, relevant scientific questions to be addressed by the 2020 Dietary Guidelines Advisory Committee are key research priorities.

Both research tactics include targeted outreach and knowledge sharing.

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## Scientific Questions Identified for 2020 Dietary Guidelines Advisory Committee

A number of scientific questions to be posed to the 2020 Dietary Guidelines Advisory Committee have been developed as part of the Department of Agriculture's and Department of Health and Human Services' new approach to developing the 2020-2025 Dietary Guidelines for Americans (Guidelines).

These questions will be addressed by committee members during their deliberations and will be key determinants of the areas of scientific expertise needed on the Committee.

The topics and scientific questions focus on life stages including infants and toddlers from birth to 24 months; children and adolescents, ages 2-18 years old; adults, ages 19-64 years old; pregnancy and lactation; and older adults, ages 65 years or older. The 2020 Guidelines are required to include recommendations for the pregnant and birth to 24-months populations for the first time. Key topics include current dietary intake and nutrients of public health concern; dietary patterns; beverages; added sugars; types of dietary fats; seafood; and frequency of eating.

The Guidelines serve as the basis for federal nutrition policy and programs and are required by law to be updated every five years through a process jointly conducted by USDA and HHS.

The complete list of topics and questions is available at [www.dietaryguidelines.gov](http://www.dietaryguidelines.gov).

## Research Advisory Committee

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## Foundation Education Programs Schedule of Events

### Animal Care and Handling Conference

Kansas City, Missouri  
October 18-19, 2018

### Advanced *Listeria monocytogenes* Intervention & Control Workshop

Kansas City, Missouri  
October 23-24, 2018

### Worker Safety Conference for the Meat and Poultry Industry

*Co-located at the International Production and Processing Expo (IPPE)*  
Atlanta, Georgia  
February 11-12, 2019

### Environmental Conference for the Meat and Poultry Industry

*Co-located at the International Production and Processing Expo (IPPE)*  
Atlanta, Georgia  
February 11-12, 2019

### Pathogen Control and Regulatory Compliance in Beef Processing Conference

Rosemont, IL  
September 4-5, 2019

*For more information on these programs, please visit the events page at [www.meatinstitute.org](http://www.meatinstitute.org).*

## SAVE THE DATE

2019 Beef Industry Safety Summit

March 5 - 7, 2019

Kansas City Marriott Downtown



### Save the Date for the 2019 Beef Industry Safety Summit

The Beef Industry Safety Summit has been established as the premier event that brings industry leaders and safety professionals together from all sectors of the beef industry to focus on strategies to improve beef safety. The 2019 Beef Industry Safety Summit will take place March 5-7<sup>th</sup> in Kansas City, MO. The meeting promises to deliver the latest research information and access to safety experts. Please "Save the Date" for this event. For more information, visit

[www.bifSCO.org](http://www.bifSCO.org)

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