

# FOUNDATION FOCUS



## FOUNDATION SECURES FY21 BEEF CHECKOFF FUNDING

The Foundation for Meat and Poultry Research and Education was authorized more than \$645,000 in FY21 to conduct research on behalf of the Beef Checkoff. Research will address post-harvest beef safety and processed beef nutrition.

“The Foundation is thrilled to be able to continue to administer research on these critical topics on behalf of the Beef Checkoff,” said Susan Backus, President, Foundation for Meat & Poultry Research & Education. “The Checkoff investment in post-harvest beef safety and processed beef nutrition research is critical to expanding the knowledge base; ensuring consumer and customer trust in beef products; and providing value to beef producers by demonstrating that beef products are safe and nutritious.”

Research funding will be used toward projects addressing current knowledge gaps; facilitating the dissemination of research data and knowledge sharing through meetings, or other events targeted to appropriate stakeholders; assessing research impact over time by cataloging citations for research funded by the Beef Checkoff and administered by the Foundation; developing tools that share post-harvest research results or summarize research to provide guidance and information for beef processing facilities of all sizes; and developing tools that substantiate processed beef products’ role in a healthy, sustainable diet and active lifestyle.

Post-harvest beef safety research and processed beef nutrition research could address any appropriate research priorities identified by the Foundation’s Research Advisory Committee, which may include but are not limited to: developing methods for quantitative *Salmonella* enumeration and methods based on virulence factors rather than serotypes; and conducting menu modeling demonstrating the role of further processed beef in the healthy dietary patterns identified in the 2020-2025 Dietary Guidelines, respectively.

An overview of current and recently completed research funded by the Beef Checkoff and Administered by the Foundation is available [here](#).

## FSIS HOSTS VIRTUAL PUBLIC MEETINGS ON *SALMONELLA* AND CONSUMER OUTREACH AND EDUCATION

Earlier this month and in September, the Food Safety and Inspection Service (FSIS) hosted two public meetings. Of note for the Foundation were the following:

- **"*Salmonella* - State of the Science" on September 22, 2020**

FSIS, the Agricultural Research Service (ARS), the U.S. Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention (CDC) participated to discuss work to reduce *Salmonella* contamination associated with FSIS-regulated products to save lives, lead with science, build relationships and include behavior change. USDA's Office of Food Safety (OFS) and FSIS's plan to decrease *Salmonella*, the [Roadmap to Reducing \*Salmonella\*: Driving Change through Science-Based Policy](#), was also part of the discussion.

[Here](#) is the agenda for the meeting which included remarks by Paul Kiecker, Administrator, FSIS, USDA, Mindy Brashears, PhD, Under Secretary for Food Safety, USDA, Frank Yiannas, MPH, Deputy Commissioner for Food Policy and Response, Robert Tauxe, MD, MPH, Director, Division of Foodborne, Waterborne, and Environmental Diseases, Kis Robertson Hale, DVM, MPH, Chief Public Health Veterinarian and Deputy Assistant Administrator, Office of Public Health Science, FSIS, USDA, Denise Eblen, PhD, Assistant Administrator, Office of Public Health Science, FSIS, USDA, William Shaw, PhD, Executive Associate for Laboratory Services, Office of Public Health Science, FSIS, USDA and Philip Bronstein, PhD, Assistant Administrator, Office of Field Operations, FSIS, USDA among others.

- **"Consumer Outreach and Education Today and for the Future" on October 6, 2020**

FSIS, FDA, CDC and the Partnership for Food Safety Education participated to establish a comprehensive understanding of how consumers handle and prepare food, by reviewing recent research and forthcoming research, so as to develop the most effective approach for consumer outreach and education in the future.

[Here](#) is the agenda for the meeting which included remarks by Mindy Brashears, Ph.D., Under Secretary for Food Safety, USDA, Carol Blake, Assistant Administrator, Office of Public Affairs and Consumer Education, FSIS, USDA, Shelley Feist, Executive Director, Partnership for Food Safety Education, Rob Tauxe, MD, MPH, Director, Division of Foodborne, Waterborne and Environmental Diseases, National Center for Emerging and Zoonotic Infectious Diseases, CDC, HHS and Frank Yiannas, Deputy Commissioner for Food Policy and Response, FDA, HHS. The meeting also featured speakers from the private sector, academia and industry trade associations.

FSIS will have recordings of the two virtual meetings [here](#) when available.

## MEAT INDUSTRY FOOD SAFETY CONFERENCE FEATURES FOUNDATION RESEARCH

On September 9-11, the North American Meat Institute and the Foundation for Meat and Poultry Research and Education hosted the virtual Meat Industry Food Safety Conference. At the conference, numerous projects funded by the Foundation were presented. Dr. Noelle Noyes, Assistant Professor at the University of Minnesota presented at the opening session, Pathogens, Pipelines and Phylogenomics: Evaluating the Computational Protocols Used to Identify Foodborne Outbreaks from WGS Data. Dr. Noyes' research is funded in part by the Beef Checkoff. Dr. Randall Phebus, Professor at Kansas State University presented in the Pork and *Salmonella* Intervention Study update session. Dr. Harshavardhan Thippareddi, Associate Professor at the University of Georgia presented at the Use of Dynamic Predictive Models for *S. aureus* to Evaluate the Microbiological Safety of Heating Process Deviations session. Dr. Thippareddi's research is funded in part by the Beef Checkoff and Beef Industry Food Safety Council. The Beef Checkoff, under the Foundation's administration, also sponsored the Conference and specifically a session entitled, "A Holistic Approach to *Salmonella*," which shared lessons learned from the turkey industry that can be used by the beef industry to inform steps to help mitigate the presence of *Salmonella*.

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## 2020 RESEARCH ADVISORY COMMITTEE

The Foundation's Research Advisory Committee (RAC) develops meat and poultry research priorities which serve as the basis for the Foundation's research agenda and also communicates the areas of greatest research needs to the government, public and interested stakeholders. The RAC is made up of four subgroups across minimally processed (fresh) meat and poultry safety, further processed meat and poultry safety, nutrition sciences and product quality.

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<sup>R</sup> – Research Advisory Committee

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<sup>FP</sup> – Further Processed Meat and Poultry Safety Subgroup

<sup>CT</sup> – Minimally Processed Poultry Safety Subgroup

<sup>Q</sup> – Product Quality Subgroup

<sup>N</sup> – Nutrition Sciences Subgroup

## FOUNDATION EDUCATION SCHEDULE

### **Annual Meat Conference**

March 21 – March 23, 2021  
Dallas, TX

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

April 21-22, 2021  
Kansas City, MO

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

October 19-20, 2021  
Kansas City, MO

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

## CURRENT FOUNDATION RESEARCH PROJECTS

### **Improving Validation Methods of *Salmonella* Lethality on the Surface of Multiple Impingement - Cooked Meat and Poultry Products, Michigan State University, University of Wisconsin**

The study will identify critical limits (i.e., humidity, air velocity, surface time-temperature), relative to achieving target *Salmonella* lethality on the surface of impingement-cooked products. A spreadsheet-based solution for calculating surface lethality of *Salmonella* on multiple products will be developed and cross-validated. Findings are intended to improve the ability of the meat and poultry industry to comply with Appendix A requirements.

*Research funded in part by the Beef Checkoff and the Pork Checkoff.*



### **Validation of a novel method for the detection of select *Salmonella* serovars in raw meat enrichments, USDA-ARS-Meat Animal Research Center**

The project will evaluate the sensitivity and specificity of a novel multiplex PCR assay for the detection of four of the leading disease causing *Salmonella* serotypes, including Enteritidis, Typhimurium, (1,4,[5],12:i:-), and Newport, as well as the invasive serotype Dublin. This assay will be used to detect *Salmonella* in raw meat enrichment samples that will be analyzed using current industry methods so that the results are readily applicable to the needs of the meat industry.

*Research funded in part by the Beef Checkoff and the Pork Checkoff.*



### **Effects of proportioning meat and plant-based protein-rich foods within the U.S. Healthy Eating Pattern on cardiovascular disease risk factors, Purdue University**

This project will assess the effects of consuming different proportions of red meat and plant-based protein-rich foods incorporated into a U.S. Healthy Eating Pattern on cardiovascular disease risk factors in adults at high risk of developing a heart-related disease.

*Research funded in part by the Beef Checkoff.*



### **Using Rapid Evaporative Ionization Mass Spectrometry (REIMS) as a novel, minimally invasive, real time method for characterization of metabolic variation contributing to flavor, tenderness, and color stability of beef, Texas Tech University, USDA-ARS-Meat Animal Research Center**

This project will explore the ability of REIMS as a real time predictor of beef tenderness and sensory attributes, including flavor and evaluate the ability of REIMS as a real time measure and predictor of color stability of beef longissimus steaks.

## CURRENT FOUNDATION RESEARCH PROJECTS (CONT.)

### **How Does Analytical Approach Impact Pathogen Population Structure When Analyzing Whole Genome Sequence Data?, University of Minnesota, IBM**

The overall goal of this project is to support an accurate, reproducible, transparent and uniform approach to whole-genome sequence (WGS) analysis for purposes of outbreak detection and pathogen surveillance. The overarching objective is to demonstrate how different analytic approaches to whole-genome sequence analysis can impact analysis results.

*Research funded in part by the Beef Checkoff.*



### **Effects of Red Meat Consumption on Gut Microbiota in Young Adults, Purdue University, University of Colorado**

Gut microbiota are an important contributor to human metabolic health and the impact of animal-based foods, unprocessed and processed red meat in particular requires investigation. Results from a recent study with rats suggest that consuming processed vs. unprocessed red meats may differentially influence gut microbiota profile. This project intends to determine the effect of unprocessed and processed red meat on gut microbiota.

*Research funded in part by the Beef Checkoff.*



### **Meat as a First Solid Food on Risk of Overweight and Neurodevelopment in Infants, University of Colorado Anschutz Medical Campus, University of Colorado Denver**

Early complementary feeding is a unique and malleable period to prevent rapid weight gain and later obesity, and is also a critical phase for neurodevelopment. Meat is an excellent source of high-quality protein and micronutrients, which are critical for the normal development of older infants. This research will conduct a randomized controlled trial to comprehensively evaluate the effect of meat on growth, body composition, risk of overweight and neurodevelopment, with a protein intake at the reported population median. Findings from this study will be generalizable and help inform future dietary guidance.

*Research funded in part by the Beef Checkoff.*



### **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.

*Research funded in part by the Beef Checkoff and Beef Industry Food Safety Council.*



## CURRENT FOUNDATION RESEARCH PROJECTS (CONT.)

### **Pathogen Growth in Alternatively Cured Ham and Bacon during Cooking, Cooling, and Process Deviations, Iowa State University and Smithfield Foods**

The overall goal of the project is to determine the inhibitory effect of nitrite from a natural source (i.e., pre-converted celery juice powder) in processed meat products with a natural label during “real world” cooking and chilling procedures, which often include instances of process deviation, as well as non-continuous cooling.

### **Tests of *Salmonella* Sub-unit Proteins as Vaccines for Broiler Chickens, USDA-ARS U.S. National Poultry Research Center**

This project will identify the *Salmonella* protein antigens that are able to induce humoral immune response in broilers, and consequently these antibodies can prevent *Salmonella* colonization in the broiler gastrointestinal tracts.

### **Research Priority Setting Meeting for Certain By-Products**

There is limited research on the impact of rendering on foodborne pathogens, particularly with the implementation of the Food Safety Modernization Act. The Foundation will work with allied stakeholders in the rendering, pet food and cosmetic industries throughout North America to assemble a meeting where industry standards can be discussed to better inform future research priorities and projects. There is a dearth of critical parameters for this type of research.



## THANK YOU TO THE FOUNDATION'S 2020 CONTRIBUTORS

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